D8.1 – Personal Career Development Plans

Grant Agreement nº:	MSCA ITN EJD n. 814177
Project Acronym:	LAST-JD-RIoE
Project Title:	Law, Science and Technology Joint Doctorate: Rights of the Internet of Everything (LAST-JD-RIoE)
Website:	https://www.last-jd-rioe.eu/
Contractual delivery date:	30/11/2019
Actual delivery date:	06/12/2019
Contributing WP	WP1
Dissemination level:	Public
Deliverable leader:	UNIBO
Contributors:	all beneficiaries

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie ITN EJD grant agreement No 814177

Document History

Version	Date	Author	Partner	Description
1.0	01/10/2019	Monica Palmirani	UNIBO	First draft
2.0	10/11/2019	PhD Students		Contribution of the career plan
3.0	20/11/2019	All the other beneficiaries	All the other beneficiaries	Second draft
4.0	29/11/2019	Supervisors	Supervisors	Third draft
5.0	06/12/2019	Monica Palmirani	UNIBO	Final version

Contributors

Partner	Name	Role	Contribution
	All the other beneficiaries		
	All the PhD students		

Table of Contents

Executive Summary

This document is present the Deliverable D8.1, which reports the Career Development Plan of each PhD student.

The Career Development Plans presented in this deliverable are a preliminary draft and they will evolve each year.

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1 Career Development Plans

This is the preliminary collection of the career development plans of the PhD candidates of LAST-JD-RIoE. It is expected to update this deliverable each year with the new plan. The plan includes conferences, summer schools, events of dissemination, training activities.

The Career Development Plans presented in this deliverable are a preliminary draft and they will evolve each year.

The list of the PhD candidates with the corresponding supervisors, mobility plan.

The list of PhD research abstract and expected results are listed in the Annex B.

The career development plans are listed in Annex C.

Annex A – Co-supervisors plan

N.ESR/N.POSITION in the Call for Applications	BENEFICIARY	PROJECT TITLE	MOBILITY	CANDIDATE	CHANGES	SUPERVISOR 1	SUPERVISOR 2	SUPERVISOR 3
ESR1/ (5)	UNIBO	Governing algorithms in the Big Data era for balancing new digital rights	UNIBO (M8-M13); UNITO (M14-M19-included 6 months), UPM (M20-M25-included 6 months). CELI (M38-M43 months 6 months)	YALCIN ORHAN GAZI	OK	from UNIBO: SARTOR (main-supervisor)	from UPM: BAJO	from UNITO PAGALLO simply mentor
ESR2/ (6)	UNIBO	Big data analysis systems in IoE environments for managing privacy and digital identity: pseudonymity, deanonymization, and the right to be forgotten.	UNIBO M8-M13 (6 months); UNITO M14-M19 (6 months); UL (M20-M28) (9 months); UNIBO (M29-M37); TuoTempo M38-M43 (6 months)	PODDA EMAUELA	UNIVIE is replaced with UNITO and UAB with UL	from UNIBO: PALMIRANI (main-supervisor)	from UNITO: MASSIMO DURANTE	from UL: MARK COLE
ESR3/ (16)	LUH	Internet of Data: Fundamental Rights in the context of the IoE and Big Data	UNIBO (M8-M13-included- 6 months in total), MRU (M14-M19-included 6 months), LUH (M20-37), Consoft (M38-M43 months 6 months)	VARGA STEPHAN	UAB is replaced with MRU	from UNIBO: SARTOR	from LUH Krügel (main-supervisor)	from MRU: KISKIS
ESR4/ (12)	UL	Security and privacy of resource constrained devices	UNIBO (M8-M13-included- 6 months in total), UNITO (M14-M19-included 6 months), UL (M20-M37); Iooota (M38-M43 months	CHIARA PIER GIORGIO	OK	from UNIBO: BRIGHI	from UL: COLE (main-supervisor)	from UNITO PAGALLO

			6 months)					
ESR5/ (14)	MRU	Internet of Things (Law): Legal liability of IoE devices in the home	UNIBO (M8-M13-included- 6 months in total), UNITO (M14-M19-included 6 months), MRU (M20-37); LIC (M38-M43 months 6 months)	GENNARI FRANCESCA	OK	from UNIBO: SARTOR	from MRU: KISKIS (main-supervisor)	from UNITO GRAZIADEI
ESR6/ (10)	UAB	Surveillance risks in IoT applied to Smart Cities	UNIBO (M8-M13-included- 6 months in total), UAB (M14-M19); KUL (M20-M25 included 6 months in total), UAB (M26-M37); Agile Lab (M38-M43 months 6 months)	NERONI REZENDE ISADORA	OK	from UNIBO: CAIANIELLO simply mentor	from KUL VEDDER	from UAB: GÓRRIZ (main-supervisor)
ESR7/ (19)	UPM	Location privacy and inference in online social networks	UNIBO (M8-M13-included- 6 months in total), UNITO (M14-M19-included 6 months), UPM (M20-M37); BitNomos (M38-M43 months 6 months)	ZICHICHI MIRKO	OK	from UNIBO: FERRETTI (main-supervisor)	from UPM: RODRIGUEZ	from UNITO DURANTE simply mentor
ESR8/ (8)	UNITO	Neo-commodification of persons: the exploitation of personal data and impact on the sharing economy	UNIBO (M8-M13-included- 6 months in total), UNITO (M14-M19); UNIVIE (M20-M25-included- 6 months in total), UNITO	VOGEL YANNICK	OK	from UNIBO: SARTOR	from UNIVIE: SCHWEIGHOFER	from UNITO DURANTE (main-supervisor)

			(M26-M27); Augeos (M38-M43 months 6 months)					
ESR9/ (7)	UNIBO	Influenceable Autonomy and Predictable Freedom in the IoE	UNIBO (M8-M13); MRU (M14-M19- included 6 months), KUL (M20-M25- included 6 months), UNIBO(M26-M37); BitNomos (M38-M43 months 6 months)	GARTNER MAXIMILIAN	UAB is replaced with KUL	from UNIBO: SARTOR (main-supervisor)	from KUL: VEDDER	from MRU KISKIS
ESR10/ (9)	UNITO	Big Data for Health in IoE in emergency situations	UNIBO (M8-M13- included- 6 months in total), UNITO M14-M19; UL (M20-M28- included- 9 months in total), UNITO (M29-M37); Caretek (M38-M43 months 6 months),	GERYBAITE AISTE	OK	from UNIBO: PALMIRANI	from UL: THEOBALD	from UNITO PAGALLO (main-supervisor)
ESR11/ (17)	UNIVIE	Internet of Healthcare (Law): Privacy and Data Protection Aspects in IoE	UNIBO (M8-M13- included- 6 months in total), UNITO (M14-M19- included- 6 months in total), UNIVIE (M20-M37), TuOTempo (M38-M43 months 6 months)	RAK RICHARD RUDOLF	UAB is replaced with UNITO	from UNIBO: PALMIRANI	from UNIVIE: SCHWEIGHOFER (main-Supervisor)	from UNITO GRAZIADEI
ESR12/ (15)	KUL	Ethical, Legal and Social issues of eHealth regarding	UNIBO (M8-M13- included- 6 months in total), UAB-OBD	BRESIC DANIELA	OK	from UNIBO: ZULLO- simply mentor	from KUL: VEDDER (main-	from UAB: CASANOVAS

		sharing personal sensitive data on an IoE platform	(M14-M19-included- 6 months in total), KUL (M20-M37); UAB Bioseka (M38-M43 months 6 months)				Supervisor)	
ESR13/ (13)	UNIBO/UL	Risk analysis and regulatory compliance of distributed ledger technologies for transaction and management of securities	UNIBO (M8-M13-included- 6 months in total), UNITO (M14-M19-included- 6 months in total), UL (M20-M31), UNIBO (M32-37), Augeos (M38-M43 months 6 months)	YU LIUWEN	OK	from UNIBO: PALMIRANI	from UL: van der TORRE (main-supervisor)	from UNITO BOELLA
ESR 14/ (11)	UAB	Distributed ledger technologies between anonymity and publicity	UNIBO (M8-M13-included- 6 months in total), UAB(M14-M19); KUL (M20-M25-included- 6 months in total), UAB (M26-M37); Agile lab (M38-M43 months 6 months)	POCHER NADIA	UPM is replaced with KUL	from UNIBO: PALMIRANI simply mentor	from KUL VEDDER	from UAB: GÓRRIZ (main-supervisor)
ESR 15/ (18)	UNIVIE	Distributed ledger technologies beyond financial applications: eDemocracy and new forms of Governance	UNIBO (M8-M13-included- 6 months in total), UNITO (M14-M19-included- 6 months in total), UNIVIE (M20-M37); Bitnomos (M38-M43 months 6 months)	DISTEFANO BIAGIO	UAB is replaced with UNITO	from UNIBO: PALMIRANI	from UNIVIE: SCHWEIGHOFER (main-supervisor)	from UNITO BALDONI

Annex B – Abastract and Results

N.ESR/N. POSITION in the Call for Applications	BENEFICIARY	PROJECT TITLE	CANDIDATE	ABSTRACT	GOAL
ESR1/ (5)	UNIBO	Governing algorithms in the Big Data era for balancing new digital rights	YALCIN ORHAN GAZI	Algorithms govern a large part of our human activities and there is a risk of losing control of individual decisions. Algorithms and information systems increasingly constitute new de facto norms, regulations, duties and constraints, and they make a tremendous amount of decisions for us. The research aims to investigate how the IoE is governed by algorithms, how predictable are those algorithms, and to what extent can the algorithmic paradigm limit the capacity of people to determine their existence.	1. to investigate the emerging topic “governing algorithms” and review the state of the art 2. to investigate the philosophy of law issues (identity, autonomy, freedom of decision) in conjunction with a positive law perspective (capacity of acting, liability, cause-effect) using a comparative law methodology 3. to define a new computational model for balancing algorithms and legal principles for preserving human rights.
ESR2/ (6)	UNIBO	Big data analysis systems in IoE environments for managing privacy and	PODDA EMAUELA	The IoE works on the basis of Big Data. This project aims to investigate big data analysis systems in conjunction with the issues of privacy, de-anonymization and the right to be forgotten.	1. state of the art of the most important big data analysis systems in IoE 2. right to be forgotten, privacy and de-anonymization issues in IoE context

		digital identity: pseudonymity, deanonymization, and the right to be forgotten.			3. model for Big Data analysis compliant with privacy principles.
ESR3/ (16)	LUH	Internet of Data: Fundamental Rights in the context of the IoE and Big Data	VARGA STEPHAN		
ESR4/ (12)	UL	Security and privacy of resource constrained devices	CHIARA PIER GIORGIO	Recent hackers' attacks have shown the vulnerability of IoT devices due to their limited computing power. Given also their ubiquitous presence, lower costs and limitations in keeping security measures up to date they represent a growing risk for the security of IT infrastructures.	1. Analysis of the weaknesses of resources bounded IoT devices. 2. Analysis of legal frameworks regulating IoT security 3. Security framework and best practices for resource constrained devices
ESR5/ (14)	MRU	Internet of Things (Law): Legal liability of IoE devices in the home	GENNARI FRANCESCA	The number of safety concerns and safety standards grows exponentially with the number of IoE-Devices. The IoE will transform the way we interact, conduct business and live our lives. Many legal aspects, especially as regards the home, will need extensive analysis to be fully understood.	The advent of smart devices will have far-reaching consequences in terms of liability towards consumers. These consequences will be identified and addressed.
ESR6/ (10)	UAB	Surveillance risks in IoT	NERONI REZENDE	With the advent of the IoT, proximity sensor devices are installed in many	**1**. Analysis of smart cities technologies and regulations

		applied to Smart Cities	ISADORA	places in smart cities. Without any regulation or social policy, they could lead to e a super-surveillance network managed by multi-agent systems in the future. Such networks may be able to reduce accidents, risks, damage and errors. However, they also pose high risk of surveillance and data breaches, including hacking attacks or malware intrusion. The project is intended to investigate the ethical impacts of such model of surveillance.	2. Analysis of theoretical ethical and legal models and assess the benefits and the risks of such technologies
ESR7/ (19)	UPM	Location privacy and inference in online social networks	ZICHICHI MIRKO	Ubiquitous connectivity with mobile phones and information posted by users provides social networks with information about the users' location and activities. This information is used by them to recommend opportunities to users but also to establish prices in e-commerce and to sell users' data to data collectors. The interference on our lives are clear, both in a positive and negative sense.	1. Assessment of the information gathered by social networks. 2. Regulation analysis of the limitations on data collection and usage by social networks. 3. Technical solutions to reduce the interference.
ESR8/ (8)	UNITO	Neo-commodification of persons: the exploitation of personal data and impact on	VOGEL YANNICK	Two trends are converging raising the risk of a neo-commodification of persons: 1) a huge amount of data is collected about internet users and fed to opaque algorithms deciding an increasing number of aspects of our life.	1. Analysis of regulations concerning data and sharing economy 2. Legal measures to limit the impact of use of personal data in sharing economy contexts to

		the sharing economy		Labour is changed its meaning with the transformation of consumers in prosumers with the sharing economy and work is parcellized. The use of personal data in this context of fragmentation risks to be disruptive	decide work allocation.
ESR9/ (7)	UNIBO	Influenceable Autonomy and Predictable Freedom in the IoE	GARTNER MAXIMILIAN	The IoE is based on predictive algorithms to predict behaviours. For instance, in the future we will be able to get our preferred book from Amazon without even having to order it. This approach could produce standardization of behaviour, impair autonomous decision-making, and lead to lack of real freedom. The project aims to investigate the level of freedom the end user can maintain in situations where multi-agent systems decide on behalf of the individual and what kind of autonomy the individual can develop if all the options are previously detected and addressed.	1. definition of freedom and autonomy in IoE and in the predictable algorithm era 2. development of a theoretical theory that permits the preservation of real freedom of choice in the IoE 3. application of this theory to a concrete scenario in the IoE
ESR10/ (9)	UNITO	Big Data for Health in IoE in emergency situations	GERYBAITE AISTE	The IoE is applicable to health not only in the sports domain, but also for monitoring undesirable events (e.g., domestic accidents involving elderly people, detecting crash of vital signs with wearable wireless sensors, distribution of ambulances and	1. analysis of big data regulations on health data 2. decision theoretic framework using big data to allocate resources in emergency situation.

				availability of hospitals). To help people in these emergency situations, a large amount of data is needed, sometimes without the consent of the patient. This project is intended to investigate IT approaches respecting both the right to health and the right to privacy in emergency situations.	
ESR11/ (17)	UNIVIE	Internet of Healthcare (Law): Privacy and Data Protection Aspects in IoE	RAK RICHARD RUDOLF	The quality of the life and health of the citizen can be improved by the IoE, in particular clinical data can be shared with different health institutions and the entire clinical history of each individual can be maintained and offer potentiality for diagnosis, interpretation and statistics. Despite the obvious clinical advantages, on the other hand this trend causes clear security, legal, ethical and trust issues.	1. Analysis of current privacy issues management in healthcare and how they are affected by a total interconnected view of personal data Analysis of legal issues related to data interpretation and management
ESR12/ (15)	KUL	Ethical, Legal and Social issues of eHealth regarding sharing personal sensitive data on an IoE platform	BRESIC DANIELA	To elaborate an ethical model for balancing the rights of citizens with market growth in the IoE, with particular regard to the eHealth domain. There are different rights in the eHealth sector which interconnect and conflict with the IoE platform and devices. The quality of the life and health of the citizen can be improved by IoE	1. Analysis of the legal and social issues in eHealth 2. Ethical implication of the IoE for eHealth 3. Holistic model for managing sensitive data in a sharing community.

ESR13/ (13)	UNIBO /UL	Risk analysis and regulatory compliance of distributed ledger technologies for transaction and management of securities	YU LIUWEN	Distributed Ledger Technologies (DLTs) are fairly new. An in-depth risk analysis is therefore needed. The aim of this research track is to provide a comprehensive account of the risks associated with the use of DLTs in transacting and managing securities. The research will assess the risks, advantages and drawbacks of DLTs in this specific domain in comparison with other existing technologies for managing and transacting with securities.	1. Identify pitfalls, security problems and vulnerabilities of DLTs systems 2. Compare existing platforms of security management with new DLTs systems 3. Asses the advantages (if any) and the feasibility of building a DLT architecture for managing securities
ESR 14/ (11)	UAB	Distributed ledger technologies between anonymity and publicity	POCHER NADIA	DLTs challenge several tenets of the law. One key problem is the current state of anonymity in several applications, in particular with regards of KYC and AML regulations. This research track aims to explore the challenges of DLTs applications in the tension between the value of publicity in the law and several anonymous and pseudonymous implementations in the IoM landscape.	1. Survey of the anonymity level of different DLT implementations 2. Analysis of legal issues brought by anonymity in the legal domain 3. Possible solutions to the anonymity problem across different legal areas
ESR 15/ (18)	UNIVI E	Distributed ledger technologies beyond financial applications: eDemocracy	DISTEFAN O BIAGIO	DLTs constitute a platform suited for the implementation of new forms of governance and eDemocracy by enabling trusted transactions (and computation) across the internet. Whether DLTs will fundamentally	1. Analysis of governance models across DLT implementations 2. Case-specific analysis of governance or eDemocracy model in a specific field or domain 3. Analysis and possible design

		and new forms of Governance		change the very concepts of eDemocracy and governance, or improve existing models is the main aim of this research track.	principles of DLTs for governance and eDemocracy

Annex C – Career Development Plan

ALLEGATO 1 – PIANO DI ATTIVITA'

Career Development Plan - Year 1

Name of ESR:	**Daniela BREŠIĆ (ESR 12; Position 15)**
Department:	Centre for IT & IP Law – KU Leuven - imec
Name of Supervisors:	Prof. Dr. Anton VEDDER (KUL) (main supervisor) Prof. Dr. Silvia ZULLO (UNIBO) (co-supervisor) Prof. Dr. Pompeu CASANOVAS (UAB) (co-supervisor)
Date:	25 November 2019

The ESR is recruited for 36 months by the KATHOLIEKE UNIVERSITEIT TE LEUVEN (KUL) where she is enrolled in the doctoral program in "Law, Science and Technology" and she is expected to defend her PhD thesis within the duration of the project.

The ESR will be seconded for 6 months (during 1st semester) at ALMA MATER STUDIORUM UNIVERSITA DI BOLOGNA (UNIBO) in Bologna, for 6 months at UNIVERSITAT AUTNONOMA DE BARCELONA (UAB) in Barcelona (during 2nd semester), and for 6 months for the final internship at UAB BIOSEKA in Lithuania (during 6th semester). The rest of the stay will be spend at the beneficiary KUL in Leuven.

The main supervisor of the ESR at KUL is Prof. Dr. Anton VEDDER.

The co-supervisor of the ESR at UNIBO is Prof. Dr. Silvia ZULLO.

The co-supervisor of the ESR at UAB is Prof. Dr. Pompeu CASANOVAS.

BRIEF OVERVIEW OF RESEARCH PROJECT AND MAJOR ACCOMPLISHMENTS EXPECTED
(half page should be sufficient)

Working title of the research project:
Ethical, Legal and Social issues of eHealth regarding sharing personal sensitive data on an IoE platform

Overview of reserach project and expected results according to the Grant Agreement, Annex I part B, p. 25:
The project's aim is to elaborate an ethical model for balancing the rights of citizens with market growth in the IoE, with particular regard to the eHealth domain. There are different rights in the eHealth sector which interconnect and conflict with the IoE platform and devices. The quality of the life and health of the citizen can be improved by IoE.

The output of the PhD thesis shall include:

1. Analysis of the legal and social issues in eHealth.
2. Ethical implications of the IoE for eHealth.
3. Holistic model for managing sensitive data in a sharing community.

Envisaged approach to achieve the project's aim:

The envisaged approach to achieve the project's aim is to elaborate an ethical-legal model for (medical) data sharing with an emphasis on the responsibility of citizens towards the healthcare system by applying a normative approach. Healthcare providers use digital healthcare services to improve citizens' health, whereby citizens are becoming increasingly engaged in the treatment of their own health. Digital care, thus, seems to necessitate good self-organisation, which may call for a reconsideration of the citizens' role and duties towards the healthcare system and society. Healthcare providers (and the healthcare system in general) depend on the transfer of correct health information between the citizen and themselves in order to provide suited healthcare services. Given that citizens need to provide reliable data to healthcare providers to receive adequate medication or for therapeutic purposes, a potential moral duty from the citizens' perspective towards healthcare providers to share citizens' data with healthcare providers shall be explored. Having regard to privacy and data protection legislation, the research may investigate on how such regulation potentially could be influenced and/or adapted from a medical perspective considering that it should benefit healthcare improvement overall.

LONG-TERM CAREER OBJECTIVES
(over 5 years)

1. GOALS

The ESR is expected to complete a PhD thesis related to the project for ESR 12 (position no. 15) with the working title "Ethical, Legal and Social issues of eHealth regarding sharing personal sensitive data on an IoE platform".

The long term goals of the ESR are multiple:

- Successfully obtain a PhD in law
- Gain first-hand experience as an academic researcher within a strong research focused institution
- Gain relevant (interdisciplinary) specialization in the field of study (e.g. related to ethical, legal and technical aspects)
- Gain international exposure, networking and career opportunites
- Successfully obtain a post-doctoral position after the PhD project

2. WHAT FURTHER RESEARCH ACTIVITY OR OTHER TRAINING IS NEEDED TO ATTAIN THESE GOALS?

To be determined/agreed upon.

SHORT-TERM OBJECTIVES
(1-2 years)

1. RESEARCH RESULTS

- Acquire first-hand experience in an academic environment
- Develop and implement strong research skills
- Develop the necessary soft skills (communication through different dissemination activities, e.g. workshop, conferences etc.)
- In depth research will be carried out in the field of study through the form of a doctoral thesis in law

- Interim reports will be drafted
- Interim results will be published (target: peer-reviewed publications) and presented at conferences
- Progress status will be made available

Anticipated conferences, participation in workshops, courses, and /or seminar presentations will be presented in the Doctoral Training and Supervision Plan (DTSP-RioE), which provides a more detailed overview on the intended activities for the upcoming year. The following list may provide an overview of potential conferences that would be related to the project and beneficial for the research:

Potential conferences to attend:

- *CPDP 2020* "Data Protection and Artificial Intelligence", taking place 22-24 January 2020 in Brussels (BE) (International Conference)
- *ACM Conference on Fairness, Accountability, and Transparency* (ACM FAT), taking place 27-30 January 2020 in Barcelona (International Conference)
- *Leuven AI Law and Ethics conference* (LAILEC), taking place on 18 February 2020 in Leuven (BE) (to be announced) (International Conference; from beneficiary's perspective also national conference)
- *Cyber Security of Critical Infrastructure* (CYSEC 2020), taking place 29-30 April 2020 in Dubrovnik (HR) (International Conference)

Potential conferences with paper presentation:

- *Transformative Technologies: Legal and Ethical Challenges of the 21st Century*, taking place 7-8 February 2020 in Banja Luka (BiH), hosted by University of Banja Luka, Center for the Study of Bioethics, European Division of the UNESCO Chair in Bioethics (International Conference)
- *BILETA's annual conference 2020* "Regulating Transition in Technology and Law", taking place 7-8 April 2020 in Tilburg (NL);
- *Law via the internet* (to be announced)
- *European Privacy Scholars Conference* (PLSC Europe), location alternating between Amsterdam, Brussels, Tilburg (to be announced) (International Conference)

2. RESEARCH SKILLS AND TECHNIQUES

Through her PhD research, the ESR will gain extensive knowledge in the field of study. Among other things, the ESR is expected to:

- Conduct training in the field of study (in particular law and ethics) through the participation in seminars and conferences
- Develop critical analysis and evaluation of her own findings and those of other fellow researchers
- Acquire new and specific expertise in areas and techniques related to the researcher's field and adequate understanding of how to apply such expertise and techniques appropriately
- Grasp of ethics and technology transfer

3. RESEARCH MANAGEMENT

- Through the PhD research, the ESR will gain the ability to successfully identify and secure possible sources of funding for personal and team research as appropriate.
- Project management skills relating to proposals and tenders work programming, supervision, deadlines and delivery, negotiation with funders, financial planning, and resource management. On the basis of previous

experience, the ESR was engaged in proposal writing and may obtain further experience through the participation in other proposals at the beneficiary KUL (e.g. for H2020 project) (To be agreed upon).
- Skills appropriate to working with others and in teams and in teambuilding through collaboration with other doctoral fellows within the LaST-JD project.
- Fellowship or other funding applications planned (indicate name of award if known; include fellowships with entire funding periods, grants written/applied for/received, professional society presentation awards or travel awards, etc.) are not planned yet.

4. COMMUNICATION SKILLS

The ESR is expected to acquire strong communication abilities, notably through dissemination activities (e.g. conferences, workshops and seminars). The envisaged dissemination activities are determined in the Doctoral Training and Supervision Plan (DTSP).

Among other things, the ESR is expected to:
- Gain skills in preparing reports, in writing academic papers and books, and in preparing oral and poster presentations
- Be able to defend research outcomes at conferences, seminars etc.
- Show achievements through European and international collaboration (e.g. with other H2020 projects)
- Promote public understanding of the field of research through dissemination, its relevance to citizens' everyday lives, and its implications for citizens and society in general
- Promote results, which may possibly influence policy-making, industry and citizens' lives

5. OTHER PROFESSIONAL TRAINING (COURSE WORK, TEACHING ACTIVITY):

On the basis of her previous experience, the ESR was enganged in the supervision of a master thesis. In order for the ESR to further develop teaching and communcation skills, she will be able to supervise the thesis research of one or several Master students at the beneficary KUL. Such thesis research will be realted to the ESR's field of expertise or the PhD subject she is pursuing.

6. ANTICIPATED NETWORKING OPPORTUNITIES:

The ESR is expected to develop/maintain co-operative networks and working relationships as appropriate with supervisor/peers/colleagues within the institution and the wider research community. The attendance of and participation in conferences, meetings and other events may provide occasion for networking. Also, potential cooperation with other researchers in terms of publications (e.g. journal articles) may allow to develop/maintain co-operative working relationships.

7. OTHER ACTIVITIES (COMMUNITY, ETC) WITH PROFESSIONAL RELEVANCE:

- The ESR is expected to be able to tackle issues related with career management, including transferable skills, management of own career progression, ways to develop employability, awareness of what potential employers are looking for when considering CV applications etc.
- The ESR envisions to start looking for post-doctoral projects towards the second/third year of the project, and/or to develop post-doctoral project plans.

Date & Signature of fellow:

Daniela Brešić

Daniela Brešić

Date & Signature of supervisors:

26/11/2019

Prof. Dr. Anton Vedder
(Main supervisor)

Silvia Zullo

Prof. Dr. Silvia Zullo
(Co-supervisor)

POMPEU CASANOVAS ROMEU - DNI 39040091Y

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Date: 2019.11.29 08:10:43 +11'00'

Prof. Dr. Pompeu Casanovas
(Co-supervisor)

ALLEGATO 1 – PIANO DI ATTIVITA'[1]

Career Development Plan - Year 1

Name of ESR:	**PIER GIORGIO CHIARA**
Department:	Law, Science and Technology - Last-JD-RIoE
Name of Supervisors:	-MARK COLE -RAFFAELLA BRIGHI -UGO PAGALLO
Date:	1/11/2019

The ESR is recruited for 36 months by Alma Mater Studiorum - Università di Bologna where he is enrolled in the doctoral program in "Law, Science and Technology" and he is expected to defend his PhD thesis within the duration of the project.

The ESR will be seconded for n.6 months at University of Bologna and for n.6 months at University of Turin

The supervisor of the ESR at UNIBO is prof. Raffaella Brighi.

The supervisor of the ESR at Unito is prof. Ugo Pagallo.

The supervisor of the ESR at UniLu is prof. Mark Cole (main supervisor)

BRIEF OVERVIEW OF RESEARCH PROJECT AND MAJOR ACCOMPLISHMENTS EXPECTED (half page should be sufficient)
The PhD thesis will investigate, under the lens of regulations and standards in force nowadays, how the security of personal data processing can be lawfully enforced by data controllers (especially if SMEs) in IoT system with a security risk management plan in a GDPR compliant way and, on the other side how user's trust can be enhanced. The aim of the project is therefore to provide a structured representation of the broad notion of security of processing, and its intertwined relation with both data controllers and users, within the IoT ecosystem, in order to bridge the gap between the legal provisions and their understanding as well as the perception of risk. The former (data controllers) will benefit from a structured representation made up by legislative texts, standards, guidelines and code of conducts in developing a security risk management plan, the latter (users) will better understand the risks connected to the security of the processing involving their data. The seemingly paradoxical association of concepts like

[1] See guidance on how to complete the plan at the end of the document.

privacy and transparency revolves around the understanding that limitations on user oversight and on transparency in management of security of processing are likely to ease data breaches and undermine trust, by hampering therefore the significant potential of IoT devices.

Furthermore, I will try to get in touch with local companies to identify suitable case-studies where to apply and evaluate the effectiveness of the legal ontology developed.

This approach should help to meet the twofold challenge of increasing transparency and user trust in identifying technologies, and thus enhance user privacy, and of providing guidelines for data controllers or processors (especially of SMEs), on adopting security measures.

LONG-TERM CAREER OBJECTIVES (over 5 years)
1. GOALS
The ESR is expected to complete a PhD thesis related to the project **"Security and privacy of resource constrained devices"**.
2. WHAT FURTHER RESEARCH ACTIVITY OR OTHER TRAINING IS NEEDED TO ATTAIN THESE GOALS?
Still to be determined.

SHORT-TERM OBJECTIVES (1-2 years)
1. RESEARCH RESULTS
- Anticipated publications n/a
- Anticipated conference, workshop attendance, courses, and /or seminar presentations Jurix, Madrid 2019 RULE MR+ RR, Bolzano
2. RESEARCH SKILLS AND TECHNIQUES

I'd study to acquire competence in legal informatics, in order to build an ontology.

Original, independent and critical thinking

Critical analysis and evaluation of one's findings and those of others

3. RESEARCH MANAGEMENT

Ability to successfully identify and secure possible sources of funding for personal and team research as appropriate.

Project management skills relating to proposals and tenders work programming, supervision, deadlines and delivery, negotiation with funders, financial planning, and resource management.

Skills appropriate to working with others and in teams and in team-building.

4. COMMUNICATION SKILLS

Personal presentation skills, poster presentations, skills in report writing and preparing academic papers and books.

To be able to defend research outcomes at seminars, conferences, etc.

Contribute to promote public understanding of one's own field

5. OTHER PROFESSIONAL TRAINING (COURSE WORK, TEACHING ACTIVITY):

Availability of being involved in teaching, supervision and mentoring.

6. ANTICIPATED NETWORKING OPPORTUNITIES:
Develop/maintain co-operative networks and working relationships as appropriate with supervisor/peers/colleagues within the institution and the wider research community
7. OTHER ACTIVITIES (COMMUNITY, ETC) WITH PROFESSIONAL RELEVANCE:
Issues related with career management, including transferable skills, management of own career progression, ways to develop employability, awareness of what potential employers are looking for when considering CV applications

Date & Signature of fellow:

25/11/19

Date & Signature of supervisors:

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Career Development Plan

Guidance on some of the competencies expected

The following points are a non-exhaustive series of aspects that could be covered by the career development plan, and it is relevant to the short-term objectives that will be set by the researcher and the reviewer at the beginning of the fellowship period. The objectives should be set with respect to the skills and experience that each researcher should acquire at a given time of his/her career. A postgraduate researcher at PhD level will have very different needs compared to a post-doctoral researcher at an advanced stage of his/her professional development. These objectives should be revised at the end of the fellowship and should be used as a pro-active monitoring of progress in the researcher's career.

1. Research results.

These should give an overview of the main direct results obtained as a consequence of the research carried out during the training period. It may include publications, conference, workshop attendance, courses, and /or seminar presentations, patents etc. This will vary according to the area of research and the type of results most common to each field. The information at this level should be relatively general since the career development plan does not strictly constitute a report on the scientific results achieved.

2. Research Skills and techniques acquired.

Competence in experimental design, quantitative and qualitative methods, relevant research methodologies, data capture, statistics, analytical skills.

Original, independent and critical thinking.

Critical analysis and evaluation of one's findings and those of others

Acquisition of new expertise in areas and techniques related to the researcher's field and adequate understanding their appropriate application

Foresight and technology transfer, grasp of ethics and appreciation of IPPR.

3. Research management.

Ability to successfully identify and secure possible sources of funding for personal and team research as appropriate.

Project management skills relating to proposals and tenders work programming, supervision, deadlines and delivery, negotiation with funders, financial planning, and resource management.

Skills appropriate to working with others and in teams and in teambuilding.

4. Communication skills.

Personal presentation skills, poster presentations, skills in report writing and preparing academic papers and books.

To be able to defend research outcomes at seminars, conferences, etc.

Contribute to promote public understanding of one's own field

5. Other professional training (course work, teaching activity):

Involvement in teaching, supervision or mentoring

6. Anticipated networking opportunities.

Develop/maintain co-operative networks and working relationships as appropriate with supervisor/peers/colleagues within the institution and the wider research community

7. Other activities (community, etc) with professional relevance.

Issues related with career management, including transferable skills, management of own career progression, ways to develop employability, awareness of what potential employers are looking for when considering CV applications etc.

Career Development Plan – Final Year

Name of ESR:	
Department:	
Name of Supervisors:	- -
Date:	

BRIEF OVERVIEW OF PROGRESS, ACHIEVEMENT AND PERFORMANCE (half page should be sufficient)

LONG-TERM CAREER OBJECTIVES (over 5 years): If relevant, mention any adjustments to your long-term career objectives as a result of the training received.

SHORT-TERM OBJECTIVES ACHIEVED DURING THE TRAINING PERIOD
1. RESEARCH RESULTS
- Publications (incl. in press):
- Conference, workshop attendance, courses, and /or seminar presentations:
2. RESEARCH SKILLS AND TECHNIQUES
- Training in specific new areas, or technical expertise etc:
3. RESEARCH MANAGEMENT
- Fellowship or other funding applications achieved (indicate name of award if known; include fellowships with entire funding periods, grants written/applied for/received, professional society presentation awards or travel awards, etc.)
4. COMMUNICATION SKILLS
5. OTHER PROFESSIONAL TRAINING (COURSE WORK, TEACHING ACTIVITY):

6. ANTICIPATED NETWORKING OPPORTUNITIES:
7. OTHER ACTIVITIES (COMMUNITY, ETC) WITH PROFESSIONAL RELEVANCE:

Date & Signature of fellow:

Date & Signature of supervisors:

ALLEGATO 1 – PIANO DI ATTIVITA'

Career Development Plan - Year 1

Name of ESR:	**Biagio Distefano**
Department:	Inst. f. EuR Int. Recht u. RVGL; Abt. Für Völkerrecht u. Int. Beziehungen
Name of Supervisors:	Prof. Mag. DDr. Erich Schweighofer (main) Porf. Monica Palmirani Prof. Massimo Durante
Date:	

The ESR is recruited for 36 months by Alma Mater Studiorum - Università di Bologna where she/he is enrolled in the doctoral program in "Law, Science and Technology" and she/he is expected to defend his/her PhD thesis within the duration of the project.

The ESR will be seconded for n. 6 months at UNIBO and for n. 6 months at UNITO

The supervisor of the ESR at UNIBO is prof. Monica Palmirani

The supervisor of the ESR at UNITO is prof. Massimo Durante

The supervisor of the ESR at UNIVIE is Prof. Mag. DDr. Erich Schweighofer

BRIEF OVERVIEW OF RESEARCH PROJECT AND MAJOR ACCOMPLISHMENTS EXPECTED
Distributed ledger technologies beyond financial applications: eDemocracy and new forms of Governance *DLTs constitute a platform suited for the implementation of new forms of governance and eDemocracy by enabling trusted transactions (and computation) across the internet. Whether DLTs will fundamentally change the very concepts of eDemocracy and governance, or improve existing models is the main aim of this research track.* As we enter the age of decentralization, technological and political tensions stress the fabric of modern Democracies. Understanding the theoretical and practical challenges we will be forced to face is the focus of this project. From the technological choices and their implementations, passing through their political and philosophical consequences, a new path needs to be drawn in order to open the gates towards the era of Law Engineering.

LONG-TERM CAREER OBJECTIVES (over 5 years)
1. GOALS
The ESR is expected to complete a PhD thesis related to the project "Distributed ledger technologies beyond financial applications: eDemocracy and new forms of Governance". The ultimate goal is to proactively contribute to the Digital Single Market by working in the public sector as a specialist/academic researcher.
2. WHAT FURTHER RESEARCH ACTIVITY OR OTHER TRAINING IS NEEDED TO ATTAIN THESE GOALS?
Some additional training in comparative public/administrative and EU law could help, alongside with specific training in Computer Science with technical regard to DLTs

SHORT-TERM OBJECTIVES (1-2 years)
1. RESEARCH RESULTS
1 or 2 papers on the characteristics and features a democratic DLT should have 1 or 2 papers on the demystification of smart contracts, from source code to civil code 1 or 2 papers on the philosophical and political implications of a large scale DLT adoption 1 or 2 papers on the implementation challenges
Conference, workshop attendance, courses, and /or seminar presentations: Anticipated conferences such as: • Smart Contract Seminar, Bologna 2019 • JURIX 2019 • EGOVIS 2020 • EKAW 2020 • ICEGOV 2020 • AI&LAW • DLT Workshop Ancona • IRIS 2020 • BLOCKCHAIN SUMMERSCHOOL (BOLOGNA) • BLOCKCHAIN SUMMERSCHOOL (COPENHAGEN) IRIS Conference
2. RESEARCH SKILLS AND TECHNIQUES
- Methodology training - Training in computer science - Training in EU and comparative public law
3. RESEARCH MANAGEMENT
Time management of research project Finding appropriate ways to disseminate the results
4. COMMUNICATION SKILLS
Paper drafting and submission Public speaking

Scientific dissemination for non-scientific people
5. OTHER PROFESSIONAL TRAINING (COURSE WORK, TEACHING ACTIVITY):
Lectures for university students German language course MSCA Deliverables
6. ANTICIPATED NETWORKING OPPORTUNITIES:
Networking with supervisors, fellow candidates, other researchers during conferences and workshops; Networking with professionals of the industry
7. OTHER ACTIVITIES (COMMUNITY, ETC) WITH PROFESSIONAL RELEVANCE:
• ELSA/Almalaurea events for professional orientation of students • Non-academic events for the popularisation of science

Date & Signature of fellow:

Date & Signature of supervisors:

ALLEGATO 1 – PIANO DI ATTIVITA'

Career Development Plan - Year 1

Name of ESR:	**Maximilian Gartner**
Department:	CIRSFID / University of Bologna
Name of Supervisors:	-Giovanni Sartor -Anton Vedder -Mindaugas Kiskis
Date:	15.11.2019

The ESR is recruited for 36 months by Alma Mater Studiorum - Università di Bologna where she/he is enrolled in the doctoral program in "Law, Science and Technology" and she/he is expected to defend his/her PhD thesis within the duration of the project.

The ESR will be seconded for 6 months at the Mykolas Romeris University and for 6 months at KU Leuven.

The supervisor of the ESR at UNIBO is Prof. Giovanni Sartor

The supervisor of the ESR at MRU is Prof Mindaugas Kiskis

The supervisor of the ESR at KUL is Prof Anton Vedder .

BRIEF OVERVIEW OF RESEARCH PROJECT AND MAJOR ACCOMPLISHMENTS EXPECTED
(half page should be sufficient)

The undertaken research project aims to produce a treatise exploring the intersection of autonomy and freedom of individuals with increasingly capable and autonomous (multi-agent) systems. The projects is meant to encompass an interdisciplinary analysis of the concept of autonomy and areas of influence which agents of the IoE can be expected to exercise. In line with this, current legal frameworks will be analysed to determine their effectiveness and scope when dealing with the above.

Particularly, the research project will address the following questions:

- How does influence of agents on the autonomy of humans manifests itself in the IoE?
- How is the type of effectiveness of influence predicated by the underlying technology or method of an agent?
- How is such influence in contrast or to the benefit of the principle of human autonomy?
- How can humans become part of the optimization process of adaptive agents and what is the impact of such adjustment
- How are existing legal and ethical frameworks equipped to deal with such influence?

LONG-TERM CAREER OBJECTIVES
(over 5 years)

1. GOALS

The ESR is expected to complete a PhD thesis related to the topic Influenceable Autonomy and Predictable Freedom in the IoE, develop transferable knowledge in the field of governance of emerging technologies and legal informatics and contribute to the academic body of knowledge.

2. WHAT FURTHER RESEARCH ACTIVITY OR OTHER TRAINING IS NEEDED TO ATTAIN THESE GOALS?

The ESR will attend courses as scheduled by the PhD Coordinator and additional courses, if relevant after consultation with the PhD Supervisors. Other necessary training and research activity will be undertaken based on opportunity and need.

SHORT-TERM OBJECTIVES
(1-2 years)

1. RESEARCH RESULTS

The research proposal is structured as to allow publications or presentation of multiple more or less self-contained chapters.

Furthermore, the ESR aims for publication of research with respect to:

- Legal Technology and the Certainty Principle
- Copyright of Products of Automated Production

The ESR proposes that certain research results might warrant teaching activities by the ESR (i.e. lectures on the area of research by the ESR) at a LAST-JD Partner University, if opportunity arises.

Presentations of relevant research results and/or attendance at relevant conferences (e.g. JURIX/JURISIN, IRIS, AICOL, ICAIL, CPDP;).

2. RESEARCH SKILLS AND TECHNIQUES

Acquisition of substantial and procedural/methodical knowledge in the field of computer science, social sciences and ethics to the extent required by the research project.

3. RESEARCH MANAGEMENT

The ESR will develop the following skills:

- Ability to successfully identify and secure possible sources of funding for personal and team research as appropriate.
- Project management skills relating to proposals and tenders work programming, supervision, deadlines and delivery, negotiation with funders, financial planning, and resource management.
- Skills appropriate to working with others and in teams and in teambuilding.

4. COMMUNICATION SKILLS

The ESR will develop the following skills:

- Personal presentation skills, poster presentations, skills in report writing and preparing academic papers and books.
- Ability to defend research outcomes at seminars, conferences, etc.
- Ability to contribute to promote public understanding of one's own field

5. OTHER PROFESSIONAL TRAINING (COURSE WORK, TEACHING ACTIVITY):

The ESR will partake in courses as mandated by UNIBO.

Further training opportunities will be determined in consultation with the PhD Coordinator and the PhD Supervisors.

The ESR will partake in teaching activities, if cleared by UNIBO and based on opportunity.

6. ANTICIPATED NETWORKING OPPORTUNITIES:
The ESR will partake in networking opportunities after consultation with the PhD Coordinator and the PhD Supervisors.
7. OTHER ACTIVITIES (COMMUNITY, ETC) WITH PROFESSIONAL RELEVANCE:
The ESR will partake in other professionally relevant activities after consultation with the PhD Coordinator and the PhD Supervisors based on opportunity.

Date & Signature of fellow:

Maximilian Gartner

15.11.2019

Date & Signature of supervisors:

Prof. Anton Vedder
03/12/2019

Prof. Mindaugas Kiškis

04/12/2019

Giovanni Sartor

5/11/2019

ALLEGATO 1 – PIANO DI ATTIVITA

Career Development Plan - Year 1

Name of ESR:	**ESR 5/ (14)** **Francesca Gennari**
Department:	Law Science and Technology, LAST-JD-RIoE PhD
Name of Supervisors:	- Professor Doctor Mindaugas Kiškis - Professor Doctor Giovanni Sartor - Professor Doctor Michele Graziadei
Date:	28/11/2019

The ESR is recruited for 36 months by Alma Mater Studiorum - Università di Bologna where she is enrolled in the doctoral program in "Law, Science and Technology" and she is expected to defend his/her PhD thesis within the duration of the project.

The ESR will be seconded for n. 6 months at University of Bologna and for n.6 months at University of Turin

The supervisor of the ESR at UNIBO is prof. Giovanni Sartor.

The supervisor of the ESR at MRU is prof. Mindaugas Kiškis

The supervisor of the ESR at UNITO is prof. Michele Graziadei

BRIEF OVERVIEW OF RESEARCH PROJECT AND MAJOR ACCOMPLISHMENTS EXPECTED (half page should be sufficient)

TITLE: Internet of Things (Law): Legal Liability of IoT devices in the home

Objective: the number of safety concerns and safety standards grows exponentially with the number of IoEDevices. The IoE will transform the way we interact, conduct business and live our lives. Many legal aspects, especially as regards the home, will need extensive analysis to be fully understood.

It is intended to investigate particularly whether the actual set of legal liability in the EU (contractual, extra contractual, product liability) is still adapted for the challenges of IoT devices in the home and how this will impact especially on EU Consumer Law, Competition Law, Data Protection and IP.

This query will be answered by adopting a two-fold methodology: on the one hand, legal and bibliographic research will be used and, on the other hand, experiments will be conducted in order to have a clearer idea of how consumers' habits are influenced by the current legal

framework for IoT objects.

Major accomplishment expected: The advent of smart devices will have far-reaching consequences in terms of liability towards consumers. These consequences will be identified and addressed. At a preliminary level and just for an exemplification purpose, some scenarios will be described briefly. As far as competition rules are concerned, problems of access to the market from potential new competitors (especially of new software developers or new IoT objects producers) can have the effect of reducing the variety of IoT products that consumers can actually purchase. Another important issue in terms of data protection is to set the limits for the software of the IoEd object to train using data of data-subjects who are not aware or do not specifically agree to be subject to wider techniques of data collection and data processing. It is expected to investigate in particular the issue of data processing of home data in the light of the GDPR and competition issues.

LONG-TERM CAREER OBJECTIVES
(over 5 years)

1. GOALS

The ESR is expected to complete a PhD thesis related to the project "Internet of Things (Law): Legal Liability of IoT devices in the home".
and to *a)* to publish alongside this academically sound work which can prove insightful because of its completeness not only to the Academia but also to legal practitioners and relevant stake holders (e.g.: consumer's associations and producers); *b)* to keep on contributing in the Academic world, or *c)* alternatively, at the end of this PhD, to start a career as a consultant in Law and Technology.

2. WHAT FURTHER RESEARCH ACTIVITY OR OTHER TRAINING IS NEEDED TO ATTAIN THESE GOALS?

Training on software design is necessary as it is indispensable to understand in which measure bugs and malwares can affect the functioning of IoT objects. For further and agreed

SHORT-TERM OBJECTIVES
(1-2 years)

1. RESEARCH RESULTS

- Anticipated publications
  - Deliverables: Processing of home data in the light of the GDPR and competition issues
  - Publications (articles)
  - Conferences (papers)
  - Workshops and seminar presentations
  - Dissemination events

- Anticipated conference, workshop attendance, courses, and /or seminar presentations
  - Jurix 2019 (paper submission)
  - Jurix 2020
  - SUMMERSCHOOL LEGAL DESIGN AND HCI (2020) Tallin
  - AI & LAW Summer School 2020

- EGOVIS Conference 2020 -1
- ECAI Conference 2020-1

2. RESEARCH SKILLS AND TECHNIQUES

- Training in specific new areas, or technical expertise etc:

It will be of paramount importance to acquire a set of varied research skills and techniques such as competence in experimental design, quantitative and qualitative methods, relevant research methodologies, data capture, statistics, analytical skills.

Furthermore, the acquisition of new expertise in areas and techniques related to the ESR's field and adequate understanding of their appropriate application would be appreciated.
Lastly, a foresight and technology transfer, grasp of ethics and appreciation of Intellectual Property Rights.

3. RESEARCH MANAGEMENT

- Fellowship or other funding applications planned (indicate name of award if known; include fellowships with entire funding periods, grants written/applied for/received, professional society presentation awards or travel awards, etc.)

It is essential to acquire the ability to successfully identify and secure possible sources of funding for personal and team research as appropriate. Additionally, it will prove useful to acquire basic Project management skills relating to proposals and tenders work programming, supervision, deadlines and delivery, negotiation with funders, financial planning, and resource management.

4. COMMUNICATION SKILLS

It is vital to improve personal presentation skills, poster presentations, skills in report writing and preparing academic papers and books and to be able to defend research outcomes at seminars, conferences and contribute to promote public understanding of one's own field.

5. OTHER PROFESSIONAL TRAINING (COURSE WORK, TEACHING ACTIVITY):

The PhD student would like to start teaching/supervision activity. In fact, there can be a valuable exchange of opinions with students and it will also help practicing exposing ideas and thesis concerning my field of research. If possible, it will also be helpful to start learning Lithuanian in order to make the best of the stay at MRU.

6. ANTICIPATED NETWORKING OPPORTUNITIES:

All the conferences mentioned in point one are interesting networking opportunities, but also the annual networking opportunity offered by the organisers of LAST-JD-RIoE PhD every year will be a great opportunity to network.

7. OTHER ACTIVITIES (COMMUNITY, ETC) WITH PROFESSIONAL RELEVANCE:

To be agreed upon

Date & Signature of fellow:

28/11/2019

Date & Signature of supervisors:

Professor Michele Graziadei
03/12/2019

Professor Sartor 05/12/2019

Professor Kiškis 28/11/2019

ALLEGATO 1 – PIANO DI ATTIVITA'[1]
Career Development Plan - Year 1

Name of ESR:	**Aiste Gerybaite**
Department:	Department of legal studies
Name of Supervisors:	Main: Prof. Ugo Pagallo; 2nd and 3rd supervisors: Prof. Monica Palmirani; Prof. Martin Theobald;
Date:	11/11/2019

The ESR is recruited for 36 months by Alma Mater Studiorum - Università di Bologna where she/~~he~~ is enrolled in the doctoral program in "Law, Science and Technology" and she/~~he~~ is expected to defend ~~his~~/her PhD thesis within the duration of the project.
The ESR will be seconded for 6 months at the University of Bologna and for 9 months at the University of Luxembourg (UL)
The supervisor of the ESR at UNIBO is prof. Monica Palmirani
The supervisor of the ESR at UL is Prof. Martin Theobald
The supervisor of the ESR at UNITO is prof. Ugo Pagallo

BRIEF OVERVIEW OF RESEARCH PROJECT AND MAJOR ACCOMPLISHMENTS EXPECTED
(half page should be sufficient)

Topic: Big Data for Health in IoE in emergency situations. Healthcare big data refers to collecting, analyzing and leveraging consumer, patient, physical, and clinical data that is too vast or complex to be understood by traditional means of data processing. Big data for health may be applied also in IoE in emergency situations: namely, situations that pose an immediate risk to health, and therefore requiring urgent interventions to prevent a worsening of the situation or to mitigate the possible consequences of the situation. While some emergencies are self-evident and more easily predictable, many smaller incidents require that an observer or an affected party decide whether it qualifies as an emergency. The precise definition of an emergency, the agencies involved and the procedures used, may require the use
of more sophisticated instruments (IoE) to detect whether a situation qualifies as an emergency both from an empirical and legal standpoint. The legal qualification may also vary by jurisdiction, and this is usually set by the government, whose agencies (emergency services) are responsible for emergency planning and management. Urgent interventions and decisions in emergency situations might call upon balancing competing rights and interests (i.e. rights of the affected party).
Objectives: The IoE is applicable to health not only in the sports domain, but also for monitoring undesirable events (e.g., domestic accidents involving elderly people, detecting crash of vital signs with wearable wireless sensors, distribution of ambulances and availability of hospitals). To help people in these emergency situations, a large amount of data is needed, sometimes without the consent of the patient. This project is intended to investigate IT approaches respecting both the right to health and the right to privacy in emergency situations.
Expected Results: 1. Analysis of big data regulations on health data 2. Analysis of ITC approaches to the collection and processing of Big Data; 3. Decision theoretic framework using big data to allocate resources in emergency situation.

[1] See guidance on how to complete the plana t the end of the document.

LONG-TERM CAREER OBJECTIVES
(over 5 years)

1. GOALS

1. The ESR is expected to complete a PhD thesis related to the project "Big Data in health in IoE in emergency situations: investigating IT approaches to Big Data whilst respecting both the right to health and the right to privacy in emergency situations".
2. To produce 2 publications;
3. Attend and participate at least 2 international and national conferences;
4. In the long-term my goal is to become a professional in the Big Data field (depending on my research either continue academic career or work within the industry).

2. WHAT FURTHER RESEARCH ACTIVITY OR OTHER TRAINING IS NEEDED TO ATTAIN THESE GOALS?

1. ITC training;
2. research methodologies training;
3. data capture, statistics, data analytic skills training;
4. lectures as provided by UNIBO during the first 6months of the research (scheduled attached);
5. Attendance of conferences such as CDPD, IRIS 2020; ICEGOV.

SHORT-TERM OBJECTIVES
(1-2 years)

1. RESEARCH RESULTS

- Anticipated publications:
  1. Submission of a paper for IRIS 2021;
  2. Submisson of papers to: Journal of Big Data; European Data Protection Law Review; IEEE Transactions on Big Data;
  3. Publication of the research thesis and deliverable.

- Anticipated conference, workshop attendance, courses, and /or seminar presentations:

1. Atendance of Jurix 2020 (Madrid 11-13 December);
2. Attendance of CPDP conference (Brussells 22-24 January);
3. Attendance of IRIS 2020 (27-28-29 February);
4. ICEGOV - Athens April 1-3 http://www.icegov.org/ ;
5. Spring school Legal design and human computer interaction- April 2020;
6. IEEE BigData Confernece;
7. Annual Privacy Forum 2020;
8. IOT world congress;
9. ECAI 2020;
10. Innovation for Health conference (Rotterdam);
11. Big Data in Precision Healthcare (Stanford);
12. ML conference AI (Munich).

2. RESEARCH SKILLS AND TECHNIQUES

- Training in specific new areas, or technical expertise etc:
1. IT training;
2. research methodologies;

3. data capture, statistics, analytical skills;

3. RESEARCH MANAGEMENT

- Fellowship or other funding applications planned (indicate name of award if known; include fellowships with entire funding periods, grants written/applied for/received, professional society presentation awards or travel awards, etc.);

The MSCA covers my research plan I do not see any further funding for the programme.

4. COMMUNICATION SKILLS

1. Sof skills development will be provided to the ESR during the first semester at the UNIBO;
2. Further soft skills will be tested through presentations during the fellowship period;
3. Participation in international conferences, workshops and seminars will provide a valuable opportunity to further develop the ESR's soft skills;
4. Work on academic English skills and coloquaial Italian and French skills.

5. OTHER PROFESSIONAL TRAINING (COURSE WORK, TEACHING ACTIVITY):

1. Planned to deliver a presentation/workshop for ISACA Malta Chapter on Big Data (April 2020) in order to improve presentation skills and share knowledge on the topic within the EU (if approved);
2. Prof. Durante noted that some teaching would be possible whilst at Torino but no further plans were made (thesis supervision/lectures);
3. When opporunity arisises- participation in a community project (such as Big Data Europe)

6. ANTICIPATED NETWORKING OPPORTUNITIES:

1. PHD Welcome Camp in Bolonga (18-20 November 2019);
2. Atendance of Jurix 2020 (Madrid 11-13 December);
3. Attendance of CPDP conference (Brussells 22-24 January);
4. Attendance of IRIS 2020 (27-28-29 February);
5. ICEGOV - Athens April 1-3 http://www.icegov.org/ ;
6. Spring school Legal design and human computer interaction- April 2020;
7. IEEE BigData Confernece;
8. Annual Privacy Forum 2020;
9. IOT world congress;
10. ECAI 2020;
11. Innovation for Health conference (Rotterdam);
12. Big Data in Precision Healthcare (Stanford);
13. ML conference AI (Munich);
14. Summer schools (Organised by UNIBO/UNITO/UNILU);
15. AI & Law Summer School (Florence, IT);
16. Summer School on regulation on Robotics and AI in Europe: Legal, Ethical and Aconomic Implications;

7. OTHER ACTIVITIES (COMMUNITY, ETC) WITH PROFESSIONAL RELEVANCE:

I am an Alumni of UoM, MRU, University of Nijmegen, KPMG.

Date & Signature of fellow:
Aiste Gerybaite

05. 11. 2019

Date & Signature of supervisors:

(prof. UGO PAGALLO)

ALLEGATO 1 – PIANO DI ATTIVITA'[1]

Career Development Plan - Year 1

Name of ESR:	**Isadora Neroni Rezende**
Department:	Institute of Law and Technology, Department of Public Law – Autonomous University of Barcelona
Name of Supervisors:	- Prof. Carles Górriz - Prof. Anton Vedder - Prof. Michele Caianiello (mentor)
Date:	

The ESR is recruited for 36 months by the Autonomous University of Barcelona (UAB) where she is enrolled in the doctoral program in "Law, Science and Technology" and she is expected to defend her PhD thesis within the duration of the project.

The ESR will be seconded for n. 6 months at the University of Bologna – Alma Mater Studiorum (UNIBO) and for n. 6 months at the Catholic University of Leuven (KUL)

The supervisor of the ESR at UAB is Prof. Carles Górriz López.

The supervisor of the ESR at KUL is Prof. Anton Vedder.

The supervisor of the ESR at UNIBO is Prof. Michele Caianiello.

BRIEF OVERVIEW OF RESEARCH PROJECT AND MAJOR ACCOMPLISHMENTS EXPECTED (half page should be sufficient)
The research project is aimed at investigating the implications of IoT-driven surveillance in smart cities from privacy, data protection and ethical perspectives. With the advent of the IoT, proximity sensor devices are installed in many places in smart cities. Without any regulation or social policy, they could lead to a super-surveillance network managed by multi-agent systems in the future. Such networks may be able to reduce accidents, risks, damage and errors. However, they also pose high risk of surveillance and data breaches, including hacking attacks or malware intrusion. The identification of critical issues related to the extensive deployment of surveillance sensing devices in the urban area will constitute a starting point for the development of a new regulatory framework for sensor-based surveillance in European smart cities. This new regulatory system shall be aimed at providing smart cities citizens with effective tools to exercise their rights to privacy and data protection when facing IoT-driven surveillance. Setting a clear set of rules governing big urban data processing is considered to be crucial in ensuring a fair, democratic, human-centric development of smart cities in Europe.

[1] See guidance on how to complete the plan at the end of the document.

LONG-TERM CAREER OBJECTIVES (over 5 years)
1. GOALS
The ESR is expected to complete a PhD thesis related to the project "Surveillance risks in IoT applied to Smart Cities" and to acquire the technical and methodological skills necessary to pursue a career in the academic field, or to work as a consultant for private or public organizations operating in the field of ICT.
2. WHAT FURTHER RESEARCH ACTIVITY OR OTHER TRAINING IS NEEDED TO ATTAIN THESE GOALS?
The ESR has a mainly legal background. Thus, technical training in the field of Information and Communication Technologies should be necessary, given the interdisciplinary nature of the research programme.

SHORT-TERM OBJECTIVES (1-2 years)
1. RESEARCH RESULTS
Prospective anticipated publications: - Privacy and data protection issues related to the deployment of IoT surveillance technologie; - Surveillance in smart cities from a criminal justice perspective (e.g. smart CCTV, body-worn cameras equipped with facial recognition technologies, predictive policing programmes); - The reasonable expectation of privacy in public-private IoT environments.
The ESR will surely attend the JURIX 2019 Doctoral Consortium in Madrid. Prospective conferences/workshops to be attended in the near future are the following: - EGOVIS 2020 (Bratislava, September 2020); or - IWCFS (Bratislava, September 2020)
2. RESEARCH SKILLS AND TECHNIQUES

1) The ESR is expected to acquire the relevant research methodologies and abilities for the research project, e.g. empirical quantitative and qualitative methods, data capture, statistics, analytical skills. Those methodological techniques will be useful in gathering first-hand data on smart cities initiaves across Europe.
2) The multidisciplinary nature of the research project requires further training in specific areas of technical expertise concerning cloud computing, machine learning algorithms, technical aspects of IoT technologies (e.g. network interoperability, syntactic interoperability). On the one hand, the technical knowledge will be fundamental in exploring the ethical, privacy and data protection implications arising from the deployment of surveillance technologies. On the other, it will be useful to identify the best privacy-enhancing solutions in the framework of IoT applications in smart cities.

3. RESEARCH MANAGEMENT

The ESR will acquire the ability to successfully identify and secure possible sources of funding for personal and team research as appropriate.

4. COMMUNICATION SKILLS

By the end of the programme, the ESR shall be able to master the following communication skills:

- Report writing;
- Drafting of academic papers and books;
- Conference presentations;
- Dissemination of research results to the general public.

5. OTHER PROFESSIONAL TRAINING (COURSE WORK, TEACHING ACTIVITY):

The ESR will be involved in teaching, supervising and mentoring activities, obviously focusing on the issues object of the research project. Organisational skills will also be acquired.

6. ANTICIPATED NETWORKING OPPORTUNITIES:

In order to develop a network with the relevant research community, the ESR will attend summer schools reserved to PhD students focusing on the field of Smart Cities. Also, the ERS will be able to maintain working relationships with her peers and all supervisors thanks to half-yearly LAST-JD-RIoE appraisal interviews.

7. OTHER ACTIVITIES (COMMUNITY, ETC) WITH PROFESSIONAL RELEVANCE:

Throughout the duration of the program, the ESR will focus on the area of career management, acquiring different soft-skills relating to the management of her own career progression. A particular attention will be dedicated to the ways to develop employability in both public and private sectors, being aware of particular skills and features that employers look at when considering CV applications.

Date & Signature of fellow:

19/11/2019

Isadora Jerome Rezende

Date & Signature of supervisors:

19.11.2019

ALLEGATO 1 – PIANO DI ATTIVITA'

Career Development Plan - Year 1

Name of ESR:	**Nadia Pocher**
Department:	Law, Science and Technology
Name of Supervisors:	- prof. Carles Górriz López (main supervisor – UAB) - prof. Anton Vedder (co-supervisor – KUL) - prof. Monica Palmirani (mentor – UNIBO)
Date:	November 2019

The ESR is recruited for 36 months by **Universitat Autònoma de Barcelona (UAB)**, where she is enrolled in the doctoral program *"Doctorat en Dret"* and she is expected to defend her PhD thesis within the duration of the project. The supervisor of the ESR at the UAB is Prof. Carles Górriz López.

Concurrently, in the framework of the LaST-JD-RIoE program, she is enrolled as a PhD student in the *"Doctoraatsopleiding in de rechten"* at **Katholieke Universiteit Leuven (KUL)** and in the doctoral program in *"Law, Science and Technology"* at **Alma Mater Studiorum Università di Bologna (UNIBO)**. The co-supervisor of the ESR at KUL is Prof. Anton Vedder and at UNIBO is Prof. Monica Palmirani.

The ESR will be seconded for n. 6 months (November 2019 – April 2020) to Alma Mater Studiorum Università di Bologna (UNIBO) and for n. 6 months (November 2020 – April 2021) to Katholieke Universiteit Leuven (KUL). During the third year of the program, the ESR is expected to engage in an internship at an industrial partner organization, namely the company Agile Lab in Turin.

BRIEF OVERVIEW OF RESEARCH PROJECT AND MAJOR ACCOMPLISHMENTS EXPECTED

(half page should be sufficient)

The research track assigned to the ESR in the framework of the LaST-JD-RIoE programme is *"Distributed Ledger Technologies between anonymity and publicity"* (ESR14 IoM Law).

The research project addresses legal issues arising from the alleged state of anonymity of several DLT implementations in the Internet of Money landscape. Namely, it focuses on the impacts exerted by the tech schemes behind virtual currencies on the EU legal framework to prevent the misuse of the financial system, e.g. for money laundering and terrorist financing purposes. It analyses legal impacts of anonymity, e.g. for KYC purposes, and it aims to explore legal challenges posed in this realm by the double-edged nature of DLTs as both transparency and privacy oriented.

Consistently, expected results encompass a survey of the anonymity level of different DLT implementations in the IoM sphere, as well as an analysis of legal impacts of anonymity, to the end of identifying possible relevant solutions across different legal areas. As far as specific objectives are concerned, on the one hand this research plans to identify effective legislative and regulatory measures to ensure crypto accountability from an AML/CFT standpoint, as well as to assess the relevant role of pseudonymity. On the other hand, it pursues to discover innovative legal approaches to secure AML/CFT active cooperation in

the crypto ecosystem(s), to the end of mitigating anonymity and traceability concerns while respecting both the value of publicity and transparency in the law and the conceptual origin of the crypto economy.

LONG-TERM CAREER OBJECTIVES

(over 5 years)

1. GOALS

The ESR is expected to complete a PhD thesis related to the research track "*Distributed Ledger Technologies between anonymity and publicity*", whose objectives and expected results have been previously laid out. Furthermore, she will provide deliverables in compliance with the annexes to the Grant Agreement and relevant amendments, e.g. a "survey of the laws of DLT systems between anonymity and transparency". Parallelly, she is expected to actively take part in all interdisciplinary, specific and soft-skill courses offered by her beneficiary university (UAB), the university that coordinates the Consortium (UniBO) and the other university she will be seconded to (KUL).

Consequently, the ESR is expected to familiarize herself with the research environment and develop specific knowledge pertaining not only to blockchain, distributed ledger technologies and the Internet of Money, but also, in more general terms, to all research topics tackled by her colleagues in the context of the program. Reference is, for instance, to big data, artificial intelligence, Internet of Things, Internet of Health, eJustice, security, software, robotics. Hence, she will have the opportunity to further develop her academic and practical legal training, with specific reference to the acquisition of data protection knowledge, while complementing it by learning more specific notions belonging to the areas of computer science, information technology, engineering, ethics, general methodology and research skills.

Besides drafting her PhD thesis, during the doctoral program the ESR is expected to produce papers and other scientific materials, to be defined according to a constantly updated publication plan. At more advanced stages of the program and at the end of it she will be able to actively and effectively contribute to national and international conferences and similar events, both on her research topic and adjacent subjects. Additionally, she will be trained to prepare educational, promotional and awareness material concerning the issues at hand and to take part in outreach events.

On a practical level, the ESR will acquire the ability to provide legal advice and training to IT companies or other private or public entities active in cutting-edge sectors and requiring legal assistance to safely and adequately develop and offer innovative products and services, with notable but not limited reference to blockchain and distributed ledger technologies. Concurrently, she will be trained to employ her skills in a tech-oriented multi-sector and flexible way, so that after the PhD she may continue her research and industry-related work in favor of both academic and institutional environments, such as universities, research centers, governmental organizations and institutions, European Union institutions, international organizations, as well as private entities.

2. WHAT FURTHER RESEARCH ACTIVITY OR OTHER TRAINING IS NEEDED TO ATTAIN THESE GOALS?

In order to reach the abovementioned goals, the ESR is expected to be actively involved in the activities pursued at the interdisciplinary research centres she will be assigned to during the three-year doctoral program, such as the Institute of Law and Technology (UAB), CIRSFID (UniBO) and CiTiP (KUL). Consequently, she is expected to engage, under a preliminary proper supervision and training, in teaching, tutoring and training activities, as well as to learn how to actively take part in national and international conferences and events, both academically and industry oriented. Obviously, with exclusive reference to topics related to the LaST-JD-RIoE program.

The ESR will need to adopt an interdisciplinary and flexible approach to her studies, research and training experiences, as well as she will need to acquire general knowledge pertaining to all major topical issues

related to the convergence between information technology and the law. In order to achieve this, she will benefit from receiving computer science and engineering tutoring and lecturing. In light of her research project, the ESR will appreciate having the opportunity to study the basics of forensics and blockchain forensics and security, cryptography and algorithms, as well as she will gladly participate in any course on data analysis and statistics.

Furthermore, she will benefit from taking part in all soft-skill courses and training events organized by the Consortium. It would be very beneficial to be offered the opportunity of continuously engaging in language courses, with primary reference to the Spanish language, during the whole three-year period.

She will complement the academic and soft-skill tutoring with a practical internship at an industrial partner organization of the Consortium, Agile Lab, and through attending relevant national and international scientific and computer science-oriented events. Besides, she will take the opportunity to learn from anyone collaborating with the abovementioned universities and research centres, and she will try to make the best of any networking event she will attend and be exposed to.

SHORT-TERM OBJECTIVES

(1-2 years)

1. RESEARCH RESULTS

The ESR will produce publications, papers and scientific materials pertaining to her research topic and adjacent subjects. She will attend national and international conferences and events, where she will present the results or reviews of her work. She will attend workshops, seminars, courses and summer schools on the topics at the core of her research track and complementary ones, both organized by the universities of the Consortium and – if the required authorization is granted by the Board – by third parties (public, private, academic, institutional, industry, etc). The ESR will prepare educational, promotional and awareness material and take part in national and international outreach events.

Conference/workshop visits:

- *Jurix 2019* – Madrid (Spain) 11-13 December 2019 (authorized)
- *Distributed Ledger Technology Workshop (DLT 2020)* – Ancona (Italy) – 4 February 2020 **and/or** *Crypto Assets Conference* – Frankfurt (Germany) 9-10 March 2020

Paper presentation:

- *Jurix 2019* – Madrid (Spain) 11-13 December 2019: presentation of the preliminary research project at the Doctoral Consortium

Other courses or activities:

- *Blockchain Spring School* (Bologna) – March 2020 **and/or** *Financial Law and New Technologies (Summer School)* – Utrecht University – 27-31 July 2020

2. RESEARCH SKILLS AND TECHNIQUES

The ESR will need to further enhance her academic and practical legal knowledge while at the same time complementing it with the acquisition of more specific notions concerning the areas of computer science, information technology, engineering, ethics, general methodology and research skills. More specifically, she will need to extensively familiarize herself with blockchain and distributed ledger technologies and to adequately understand their appropriate applications, both within the financial sector and beyond.

In light of her research project, the ESR will appreciate having the opportunity to study the basics of forensics and blockchain forensics and security, cryptography and algorithms, as well as she will gladly participate in any course on data analysis and statistics.

Consistently, she will need to acquire knowledge of different research methodologies and strengthen her analytical skills. Parallelly, the ESR will be required to develop an interdisciplinary and flexible approach to the issues at hand, grounded on an original, independent and critical thinking as well as on a multi-sectoral and international problem-solving attitude. She will need to focus on refining her critical analysis skills, to the end of adequately and effectively being able to evaluate her research findings and those of her friends and colleagues. Finally, she will benefit from acquiring knowledge on data protection issues.

3. RESEARCH MANAGEMENT

The ESR will make efforts to develop all necessary expertise to successfully detect and possibly secure sources of funding for both personal and team research, as appropriate and authorized by the Board. Thus, she will need to enhance her project management skills concerning possible proposals and tenders work, which entail programming, supervisory tasks, respecting deadlines and delivery schedules. Additionally, she will focus on acquiring the necessary confidence and attitude to engage in negotiation with funders, handle financial planning and resource management.

All the abovementioned personal competences will be grounded on, and draw from, appropriately boosted interpersonal, teamwork and teambuilding skills.

4. COMMUNICATION SKILLS

During the PhD program the ESR will acquire all necessary interpersonal skills to guarantee an efficient delivery and dissemination of her research results. She will focus on the preparation of posters, presentations, report writing, other publications, academic papers, books, awareness and educational material.

She will pay attention to her public speaking and interdisciplinary skills, so that she will be able to effectively defend the outcomes of her work in the context of seminars, conferences, lectures, practical-oriented events. Parallelly, she will focus on raising awareness on the research projects being carried out by her fellow PhD candidates and other people she will meet during the upcoming years.

The ESR will make efforts to learn how to contribute to promote public understanding of her research field and adjacent subjects, by developing the necessary interdisciplinary and soft-skill expertise. In fact, people with neither legal nor scientific knowledge ought to be informed of the pivotal importance of the convergence between law, information technology, science and ethics.

5. OTHER PROFESSIONAL TRAINING (COURSE WORK, TEACHING ACTIVITY):

The ESR will actively and pro-actively take part in all activities organized by the universities and research centres of the Consortium, with notable reference to the Institute of Law and Technology (UAB), CIRSFID (UniBO) and CiTiP (KUL). In this context, she is expected to engage, under a preliminary proper supervision and training, in teaching, tutoring and training activities, as well as she will carry out supervision tasks, if appropriate. Obviously, with exclusive reference to topics related to the LaST-JD-RIoE program. Parallelly, she will also focus on developing proper organizational skills concerning events and activities related to the LaST-JD-RIoE program.

6. ANTICIPATED NETWORKING OPPORTUNITIES:

The ESR will make her best to be exposed to productive networking opportunities, such as conferences, seminars, summer schools and other events, as well as to set up and maintain co-operative networks with people from the both research and industry communities. Consistently, she will both gladly exploit activities organized by the universities of the Consortium and actively look for specific events of her choice.

Furthermore, she will make efforts to develop pleasant and fruitful working relationships with everyone she will meet during the program, with notable reference to her supervisors, fellow PhD candidates, other peers, colleagues, administrative staff, etc., both within the institutions of the Consortium and beyond.
7. OTHER ACTIVITIES (COMMUNITY, ETC) WITH PROFESSIONAL RELEVANCE:
The ESR will focus on expanding her expertise in issues pertaining to the general career management area, including transferable skills, with special reference to managing and keeping track of her own career progression. Hence, she will pay attention to possible and fruitful means to further develop employability, which requires enhancing her awareness and understanding of all kinds of skills employers and human resources managers (working for private or public entities, institutions, organizations, universities, governments, etc.) are looking for when taking into consideration CVs, applications, etc.

Date & Signature of fellow:

Nadia Boscher
19.11.2019

Date & Signature of supervisors:

19.11.2019

19.11.2019

19.11.2019

ALLEGATO 1 – PIANO DI ATTIVITA'

Career Development Plan - Year 1

Name of ESR:	Emanuela Podda
Department:	CIRSFID University of Bologna
Name of Supervisors:	Prof. Monica Palmirani Prof. Massimo Durante Prof. Mark D. Cole
Date:	25/11/2019

The ESR is recruited for 36 months by Alma Mater Studiorum - Università di Bologna where she is enrolled in the doctoral program in "Law, Science and Technology" and she is expected to defend her PhD thesis within the duration of the project.

The ESR will be seconded for n. 6 months at Università di Torino and for n. 9 months at University of Luxembourg.

The supervisor of the ESR at UNIBO is Prof. Monica Palmirani

The supervisor of the ESR at UNITO is Prof. Massimo Durante

The supervisor of the ESR at UNILUX is Prof. Mark D. Cole

BRIEF OVERVIEW OF RESEARCH PROJECT AND MAJOR ACCOMPLISHMENTS EXPECTED (half page should be sufficient)

TITLE: Big data analysis system in IoE environment for managing privacy and digital identity: pseudonymity, de-anonymization, and the right to be forgotten.

On the assumption that IoE works on the basis of Big Data, the project aims to investigate big data analysis systems in conjunction with the issue of privacy, de-anonymization and the right to be forgotten. Among the expected results, the investigation of the law of anonymization and forgetting by design: privacy and identity problems and perspectives.

The focus will be given to the collection and re-use of data set (personal and non-personal data) and, specifically, reasoning on the proportionality of the informatics tools provided by the legal framework in force (e.g. anonymization techniques), as a mean for managing privacy and digital identity.

Specifically, in the context of the Open Data, the project will investigate the collection and re-use of personal and non-personal data-sets for automated individual decision-making, including profiling, given

by Artificial Intelligence, Machine Learning and Clustering.

The research project will be organized investigating the followings:

- State of the art of the most important big data analysis systems in IoE environments
- Right to be forgotten, privacy and de-anonymization issue in IoE context
- Model for Big Data analysis compliant with privacy principles.

The research questions should be the following:

- To what extent the anonymization techniques can be considered as proportional and reasonable tools to safeguarding identity and human dignity in the automated individual decision-making - including profiling - given by Artificial Intelligence, Machine Learning and Clustering?
- To this purpose, in the context of Open Data and in light of the legal framework in force, is it still reasonable distinguishing between personal data and non-personal data for ensuring a complete protection of personal identity?
- Can anonymized data be used for automatic treatment (AI) and profiling ex art. 22 GDPR?

LONG-TERM CAREER OBJECTIVES
(over 5 years)

1. GOALS

The ESR is expected to complete a PhD thesis related to the project "Big data analysis systems in IoE environments for managing privacy and digital identity: pseudonymity, de-anonymization, and the right to be forgotten" and to develop technical expertise on informatics aimed to tailor a model for Big Data analysis compliant with privacy principles.

2. WHAT FURTHER RESEARCH ACTIVITY OR OTHER TRAINING IS NEEDED TO ATTAIN THESE GOALS?

Trainings in Informatics and IT design for protecting privacy and digital identity aimed to develop and implement a model for Big Data analysis compliant with privacy principles.

SHORT-TERM OBJECTIVES
(1-2 years)

1. RESEARCH RESULTS

- Publications
- Conferences
- Workshops and Seminar Presentation

LIST OF CONFERENCES & SUMMER SCHOOL

- La rete e la "trilogia" dell'identità – Bologna from November 2019 to March 2020 (Cycle of 6 seminars)
- EGOVIS - Bratislava September 2020 (Conference)
- Law Via Internet - Italy TBD 2020 (Conference)
- ISWS 2020 - Italy July 2020 (Summer School)

2. RESEARCH SKILLS AND TECHNIQUES

Developing competence in experimental design, quantitative and qualitative methods, relevant research methodologies, data capture, statistics, analytical skills.

Improving independent and critical thinking, critical analysis and evaluation of one's findings and those of others.

Acquiring new expertise in areas and techniques related to the researcher's field and adequate understanding their appropriate application.

Foresight and technology transfer, grasp of ethics and appreciation of IPPR.

3. RESEARCH MANAGEMENT

Ability to successfully identify and secure possible sources of funding for personal and team research as appropriate.

Project management skills relating to proposals and tenders work programming, supervision, deadlines and delivery, negotiation with funders, financial planning, and resource management.

Skills appropriate to working with others and in teams and in teambuilding.

4. COMMUNICATION SKILLS

Personal presentation skills, poster presentations, skills in report writing and preparing academic papers and books.

Disseminating ideas and to be able to defend research outcomes at seminars, conferences, etc., contributing to promote public understanding of one's own field.

5. OTHER PROFESSIONAL TRAINING (COURSE WORK, TEACHING ACTIVITY):

To be determined.

6. ANTICIPATED NETWORKING OPPORTUNITIES:

Develop/maintain co-operative networks and working relationships as appropriate with

supervisor/peers/colleagues within the institution and the wider research community.
7. OTHER ACTIVITIES (COMMUNITY, ETC) WITH PROFESSIONAL RELEVANCE:
Issues related with career management, including transferable skills, management of own career progression, ways to develop employability, awareness of what potential employers are looking for when considering CV applications etc.

Date & Signature of fellow:

Emanuela Podda

Emanuela Podda

Date & Signature of Supervisors:

Prof. Monica Palmirani

Prof. Massimo Durante

Prof. Mark D. Cole

ALLEGATO 1 – PIANO DI ATTIVITA'[1]

Career Development Plan - Year 1

Name of ESR:	**Dr. Richard Rak**
Department:	Faculty of Law of University of Vienna Faculty of Law of Alma Mater Studiorum – University of Bologna Faculty of Law of University of Turin
Name of Supervisors:	- Prof. Erich Schweighofer (University of Vienna) - Prof.ssa Monica Palmirani (Alma Mater Studiorum – University of Bologna) - Prof. Michele Graziadei (University of Turin)
Date:	26th November 2019

The ESR is recruited for 36 months by the Alma Mater Studiorum – Università di Bologna and the University of Vienna, where he is enrolled in the doctoral program in "Law, Science and Technology – Rights of Internet of Everything" and he is expected to defend his PhD thesis within the duration of the project.

The ESR will be seconded for 6 months at the Alma Mater Studiorum – University of Bologna, for 6 months at the University of Turin, stay for 18 months at the University of Vienna and be seconded for 6 months at TuOTempo (industrial partner).

The supervisor of the ESR at Alma Mater Studiorum – University of Bologna is Prof.ssa Monica Palmirani.

The supervisor of the ESR at University of Vienna is Prof. Erich Schweighofer.

The supervisor of the ESR at University of Turin is Prof. Michele Graziadei.

BRIEF OVERVIEW OF RESEARCH PROJECT AND MAJOR ACCOMPLISHMENTS EXPECTED (half page should be sufficient)

Title of research project:
Internet of Healthcare (Law): Privacy and Data Protection Aspects in IoE

Research problem:
The quality of the life and health of the citizen can be improved by the IoE, in particular clinical data can be shared with different health institutions and the entire clinical history of each individual can be maintained and offer potentiality for diagnosis, interpretation and statistics. Despite the obvious clinical advantages, on the other hand this trend causes clear security, legal, ethical and trust issues.

Research objective:
Analysis of the legal risks/benefits associated with sharing (or not sharing) medical data

Research question:
How to protect data and respect the dignity of the owner of the medical data while at the same time not losing opportunities for other patients?

Main research topics:

I. Current privacy issues management in healthcare and how they are affected by a total interconnected view of personal data
II. Legal issues related to data interpretation and management in healthcare

[1] See guidance on how to complete the plan at the end of the document.

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LONG-TERM CAREER OBJECTIVES (over 5 years)
1. GOALS
The ESR is expected to complete a PhD thesis and prepare an MSCA deliverable report related to the project "Internet of Healthcare (Law): Privacy and Data Protection Aspects in IoE", and acquire expertise in the fields of privacy, data protection law, health law and the Internet of Things.
2. WHAT FURTHER RESEARCH ACTIVITY OR OTHER TRAINING IS NEEDED TO ATTAIN THESE GOALS?
Research, training and networking activities organised in the course of the "Law, Science and Technology – Rights of Internet of Everything" joint doctoral program and participation at workshops and/or summer schools listed below

SHORT-TERM OBJECTIVES (1-2 years)
1. RESEARCH RESULTS
- Anticipated publications (in first 2 years) in the following topics: I. Current privacy issues management in healthcare and how they are affected by a total interconnected view of personal data II. Legal issues related to data interpretation and management in healthcare
- Anticipated conferences, workshop attendance, courses, and /or seminar presentations a) attendance / presentation of work in conferences, workshops and/or summer schools relating to privacy, data protection law, health law or the Internet of Things, such as: – ACM FAT*, Doctoral Consortium – Brussels Privacy Hub (BPH)'s European Data Protection Law Summer School – CPDP (Computers, Privacy and Data Protection Conference), PhD students and other junior researchers track – ENISA Annual Privacy Forum, student papers or short papers – ERA Academy of Law - Annual Conference on European Data Protection Law – ERA Academy of Law - Summer Course on European Data Protection Law – European Association of Health Law Conference – European Institute for Innovation through Health Data conferences – European Public Health Conference – HealthyIoT (part of Smart City 360° Summit) - EAI International Conference on IoT Technologies for HealthCare – ICISSP (International Conference on Information Systems Security and Privacy), Doctoral Consortium – IEEE Workshop on ICT Solutions for eHealth – International Association of Privacy Professionals (Congress or Data Protection Intensive) workshops – International Conference on Health Informatics, Doctoral Consortium – IoTBDS (International Conference on Internet of Things, Big Data and Security), Doctoral Consortium – IRIS (Internationales Rechtsinformatik Symposion) – JURIX (International Conference on Legal Knowledge and Information Systems), Doctoral Consortium b) participation in courses, conferences and summer schools organised as part of the "Law, Science and Technology – Rights of Internet of Everything" doctoral program

RR

2. RESEARCH SKILLS AND TECHNIQUES

Training in specific new areas or development of technical expertise in:

- relevant research methodologies and methods
- original, independent and critical thinking
- acquisition of new expertise in areas and techniques related to the research topic and adequate understanding of their appropriate applications

3. RESEARCH MANAGEMENT

- time management of research project
- finding appropriate ways to disseminate research results

4. COMMUNICATION SKILLS

- development of competence in preparing, submitting and revising academic papers
- presentation skills and ability to defend research outcomes at seminars, conferences, etc.
- contribution to facilitate the public understanding of the research topic

5. OTHER PROFESSIONAL TRAINING (COURSE WORK, TEACHING ACTIVITY):

- deliverables related to the MSCA project

6. ANTICIPATED NETWORKING OPPORTUNITIES:

- develop and maintain co-operative networks and working relationships with supervisors, peers and colleagues within the university/research institutions and the wider research community

7. OTHER ACTIVITIES (COMMUNITY, ETC) WITH PROFESSIONAL RELEVANCE:

- other activities organised in relation to the MSCA project

Date & Signature of fellow:

26th November 2019,

[signature]

Date & Signature of supervisors:

[signature] 5.12.19

[signature]

ALLEGATO 1 – PIANO DI ATTIVITA

Career Development Plan - Year 1

Name of ESR:	**Stephan Varga**
Department:	Law (IRI/CIRSFID)
Name of Supervisors:	-RAin Prof. Dr. Tina Krügel, LL.M. -Prof. Giovanni Sartor -Prof. Mindaugas Kiskis, Dr.
Date:	27.11.2019

BRIEF OVERVIEW OF RESEARCH PROJECT AND MAJOR ACCOMPLISHMENTS EXPECTED (half page should be sufficient)

The ESR is recruited for 36 months by Leibniz University Hannover (LUH) where he is enrolled in the doctoral program in "Law, Science and Technology" and he is expected to defend his PhD thesis within the duration of the project. The ESR will be seconded for 6 months at the Alma Mater Studiorum - Università di Bologna (UNIBO) and for 6 months at Mykolas Romeris University (MRU).

The supervisor of the ESR at LUH is RAin Prof. Dr. Tina Krügel, LL.M.
The supervisor of the ESR at UNIBO is prof. Giovanni Sartor.
The supervisor of the ESR at MRU is prof. Mindaugas Kiskis, Dr.

The research project "Internet of Data: Fundamental Rights in the Context of the IoE and Big Data" will study different models of genomic data sharing, analysing them from both a legal as well as an ethical perspective, taking into account personal data protection and human subject research.

Under the GDPR (General Data Protection Regulation), processing of personal data (such as gentic data) has to comply with the general principles of data protection, as outlined in Article 5 of the GDPR, including lawfulness, fairness and transparency; purpose limitation; data minimisation; accuracy; storage limitation; integrity and confidentiality as well as accountability. Some of these principles may be at odds with the technical realities and goals of Big Data Applications (e.g. the purpose limitation principle and the collection of data for purposes not already known).

Additionally, controllers (and processors) who process personal data have to comply with certain duties (chapter IV of the GDPR), as well as respect certain rights of the data subject (chapter III of the GDPR).

Genomic data (as a technical term) may however not only be genetic data (as a legal term) but might also be health data (a category of data at times similar to, at times slightly different from and at times overlapping with genetic data). See Recital 35 of the GDPR: "[Health data includes] information derived from the testing or examination of a body part or bodily substance, including from genetic data".

Genetic data and health data are special categories of personal data ("sensitive data"), whose processing is even more restricted than generic personal data.

The GDPR data protection rules differ from other jurisdictions, e.g. the US and its Health Insurance Portability and Accountability Act (HIPAA). Data sharing practices common in the US might therefore not necessarily be responsible (and lawful) data sharing under the GDPR.

Data protection law is however not a means in itself but part of a framework of fundamental rights. There are many benefits that might be achieved through sharing of genomic data, leading to a need for progressive (but responsible) data sharing. As such, data protection has to be balanced with other fundamental rights and the public interest. The research project will therefore also analyse the sufficiency of current policies and regulatory responses, including the regulatory responses from the Member States utilizing the opening clauses in the GDPR.

Additionally, when dealing with genomic data, rules on human subject research have to be taken into account. While it usually has a similar subject of protection to data protection law, human subject research might still nonetheless differ slightly in its objective.

In order to fulfil the interdisciplinary aspiration of the phd program, apart from the legal analysis an ethical evaluation of the different data sharing practices is also needed, taking into consideration the same overarching principles of personal data protection and human subject research.

LONG-TERM CAREER OBJECTIVES
(over 5 years)

1. GOALS

The ESR is expected to complete a PhD thesis on "Internet of Data: Fundamental Rights in the Context of the IoE and Big Data", to coordinate the deliverable "Ethical landscape of genomic data problems and possible solutions", to collaborate with other phd candidates, to publish and present papers relating to the thesis and to engage in the wider discourse on the sharing of genomic data in the context of fundamental rights, both from a legal as well as an ethical perspective.

2. WHAT FURTHER RESEARCH ACTIVITY OR OTHER TRAINING IS NEEDED TO ATTAIN THESE GOALS?

As a first step, a comprehensive review of the state of art is needed before the information can be synthesized. From a legal perspective, this does not only include data protection but also related fields such as human subject research.
Additionally, further basic technical expertise (e.g. relating to genomic data sharing) as well as ethical expertise (e.g. fundamental rights from an ethical perspective) has to be acquired in order to fulfil the interdisciplinary aspiration of the phd program.

SHORT-TERM OBJECTIVES
(1-2 years)

1. RESEARCH RESULTS

- Anticipated publications
Paper on margin of appreciation in GDPR opening clauses relating to scientific research with genetic data / health data
Deliverable on Ethical landscape of genomic data problems and possible solutions
Other papers on data protection and similar legal fields such as human subject research, taking into account the related categories of genetic data and health data

- Anticipated conference, workshop attendance, courses, and /or seminar presentations

LAST-JD RIoE courses

As many conference details are currently still unknown (including workshop topics), a preliminary list of conferences is provided. Attendance will depend on relevance to the research topic.

Intellectual Property in the Era of Artificial Intelligence

November 22nd 2019, Bologna, Italy http://www.isa.unibo.it/it/eventi/201cio-autore201d-creativita-e-proprieta-intellettuale-nell2019era-dell2019intelligenza-artificiale

JURIX

December 11th-13th 2019, Madrid, Spain https://jurix2019.oeg-upm.net/

CPDP 2020 – Data Protection and Artificial Intelligence https://www.cpdpconferences.org/

January 22nd-24th 2020, Brussels, Belgium

[Conference details currently unknown:

(IRIS 2020 https://www.univie.ac.at/RI/IRIS2020/

February 27th-29th 2020, Salzburg, Austria)

(Nello Cristianini – Machine Learning Seminar

March 13th 2020)

(TMF-Jahreskongress (data protection tutorial) http://www.tmf-ev.de/Termine/ctl/Details/Mid/785/ItemID/1515.aspx

Around March 18th -20th 2020, Aachen, Germany)

(Spring School Blockchain and Smart Contract

March 2020, Bologna, Italy)

(Luciano Floridi – Conference AI

April 2nd-3rd 2020, Bologna, Italy)

(RAILS-Conference [Last conference: https://ai-laws.org/2019/01/2nd-rails-conference-am-5-april-2019-in-berlin/]

April 2020, Germany)

(Spring School Legal Design and Human Computer Interaction

April 2020, Bologna, Italy)

(Datenschutzkongress https://www.euroforum.de/datenschutz-kongress/ May 13th-15th 2020, Berlin, Germany) (2020 Privacy Law Scholars Conference https://www.law.berkeley.edu/research/bclt/bcltevents/2020-privacy-law-scholars-conference/ June 4th to 5th, Washington, DC, USA) (Bitkom Privacy Conference 2020 https://www.privacy-conference.com/ 29th September 2020, Berlin, Germany) (DSRI-Herbstakademie 2020 October 2020, Oldenburg, Germany)]
2. RESEARCH SKILLS AND TECHNIQUES
- Training in specific new areas, or technical expertise etc: Legal research (identifying sources of information and collecting this information) Critical analysis, evaluation and synthesis of information Acquisition of expertise in medical law (human subject research, ...) Acquisition of basic technical expertise (relating to genomic data sharing, ...) Acquisition of ethical expertise (fundamental rights from an ethical perspective, ...)
3. RESEARCH MANAGEMENT
- Fellowship or other funding applications planned (indicate name of award if known; include fellowships with entire funding periods, grants written/applied for/received, professional society presentation awards or travel awards, etc.) Project management skills (deadlines and delivery, resource management, identifying and prioritizing tasks, ...)
4. COMMUNICATION SKILLS
Preparation and submission of academic papers and deliverables Personal presentation skills (conferences, webinars, ...) Dissemination of research results Collaboration with other phd candidates
5. OTHER PROFESSIONAL TRAINING (COURSE WORK, TEACHING ACTIVITY):
Internship in the last semester
6. ANTICIPATED NETWORKING OPPORTUNITIES:
Conferences and workshops listed above, communication with supervisors, regular exchanges with other phd candidates, ...
7. OTHER ACTIVITIES (COMMUNITY, ETC) WITH PROFESSIONAL RELEVANCE:

Date & Signature of fellow:

31.12

Date & Signature of supervisors:

31.12

ALLEGATO 1 – PIANO DI ATTIVITA'[1]

Career Development Plan - Year 1

Name of ESR:	Yannick Vogel
Department:	Department of Law
Name of Supervisors:	-Professor Durante (main supervisor) -Professor Sartor -Professor Schweighofer
Date:	14-11-19

The ESR is recruited for 36 months by Alma Mater Studiorum - Università di Bologna where he is enrolled in the doctoral program in "Law, Science and Technology" and he is expected to defend his/her PhD thesis within the duration of the project.

The ESR will be seconded for 6 months at Torino and for 6 months at Vienna

The supervisor of the ESR at UNIBO is Professor Sartor

The supervisor of the ESR at Vienna is Professor Schweighofer

The supervisor of the ESR at Torino is Professor Durante

BRIEF OVERVIEW OF RESEARCH PROJECT AND MAJOR ACCOMPLISHMENTS EXPECTED (half page should be sufficient)
The research project is concerned with the neo-commodification of persons: the exploitation of personal data and impact on the sharing economy. The collaborative economy, the so-called sharing economy, is proposed as a new economic and cultural model, that is capable of promoting forms of mindful consumption that prefer the rationalization of resources based on the use and exchange of goods and services rather than on their purchase, therefore on access rather than on possession. However, this business model brings about several perillous effects: namely, exploitation of personal data; profiling of persons; opacity of predictive algorithms; undermining the right to explanation; price discrimination; rights discrimination; labour makeovers; and so forth. This is particularly relevant where it also applies to IoT apps, environments, and services. While IoT promises to improve our lives, by anticipating our preferences, optimizing our choices and taking care of many daily habits, its evolution is likely to raise legal, ethical, economic and technological issues and challenges that may affect all of the aforementioned elements, that is, (a) people's rights and expectations as regards to their data and relations; (b) the information processes, delivering the right information to the right person or machine; (c) the transmission, share, store and elaboration of data in secure environments; (d) the connection of physical devices and objects to the internet and each other for intelligent decision making.

[1] See guidance on how to complete the plana t the end of the document.

LONG-TERM CAREER OBJECTIVES (over 5 years)
1. GOALS
Objectives: Two trends are converging raising the risk of a neo-commodification of persons: 1) a huge amount of data is collected about internet users and fed to opaque algorithms deciding an increasing number of aspects of our life. Labour is changed its meaning with the transformation of consumers in prosumers with the sharing economy and work is parcellized. The use of personal data in this context of fragmentation risks to be disruptive. Expected Results: 1. Analysis of regulations concerning data and sharing economy – 2. Legal measures to limit the impact of use of personal data in sharing economy contexts to decide work allocation. Another goal is to attend at least two international conferences, produce two publications and become a professional in the field of Law and Technology.
2. WHAT FURTHER RESEARCH ACTIVITY OR OTHER TRAINING IS NEEDED TO ATTAIN THESE GOALS?
The ESR needs to attend conferences primarily focussed on data protection and computer science. This will however depend on the manner in which the research framed within the topic. First to mind comes CPDP conference in Brussels in January 2020. Other training could be that offered by universities specialized in computer science and data protection law. For instance, the TILT clinics on Big Data and Law. Further research needs to be conducted into the some economic and market regulation. Further mythology training is required.

SHORT-TERM OBJECTIVES (1-2 years)
1. RESEARCH RESULTS
- Anticipated publications In order to think about a publication, I would first need to find my way of framing the right research question and mapping the problems at hand. Professor Durante expressed the wish to "aim high" for a first publication, meaning a respectful journal. I plan to take my time in order to produce a solid paper to offer to such journals. First to mind come EPDL as a journal and CPDP for a conference. This might be too ambitious in the first year but it is the level that is strived for.
- Anticipated conference, workshop attendance, courses, and /or seminar presentations

For Data Protection:
-CPDP attendance
-IAPP attendance
-Data Protection Word Forum attendance
-GDPR conference attendance
-Annual Privacy Forum attendance

For Iot:
Bosch Connected World Conference attendance
IoT Solutions World Congress attendance

For AI:
ECAI attendance
MLConferenceAI (Munich) attendance

Possible summer schools:
AI & Law Summer School (European University Institute – University of Pittsburgh School of Law)
Summer School IT Law & Legal Informatics - Saarbrücken Germany

Of course, I do not plan to visit all these conferences, but it is an overview of the relevant conferences of which attendance would be highly beneficial to my research.

2. RESEARCH SKILLS AND TECHNIQUES

- Training in specific new areas, or technical expertise etc: Some further data science education may be necessary to fully understand the manner in which I plan to describe certain aspects of data science or IoT in a correct manner.

3. RESEARCH MANAGEMENT

- Fellowship or other funding applications planned (indicate name of award if known; include fellowships with entire funding periods, grants written/applied for/received, professional society presentation awards or travel awards, etc.)

The MSCA grant covers my research plans. I do not seek further financial aid since this is not in accordance with MSCA rules.

4. COMMUNICATION SKILLS

I hope to advance my current level of English writing, both academically and in informal use. The same goes for the Italian language. Although I will not seek to elevate my level of Italian above colloquial use.

5. OTHER PROFESSIONAL TRAINING (COURSE WORK, TEACHING ACTIVITY):

Have been supervising a thesis at the EULISP programme, not certain if I will ask permission to repeat that position. Professor Durante stated that some teaching might be possible in Turin, but no agreements have been made to date.

6. ANTICIPATED NETWORKING OPPORTUNITIES:

I plan to meet with the organisers of the Advanced Study Institute in Bologna and meet other interesting PhD students. In a similar manner I plan to network at the conferences that I hope to attend.

7. OTHER ACTIVITIES (COMMUNITY, ETC) WITH PROFESSIONAL RELEVANCE:

I am part of the Tilburg Uni Alumni network and part of the EULISP network, allowing me to refer questions with professional relevance.

Date & Signature of fellow:

28.11.2019

Date & Signature of supervisors:

26.11.2019

Massimo Durante

(Massimo Durante)

Schweighofer 27.12.19

(Schweighofer)

ALLEGATO 1 – PIANO DI ATTIVITA'[1]

Career Development Plan - Year 1

Name of ESR:	**Orhan G. Yalcin**
Department:	Law, Science, and Technology
Name of Supervisors:	- Giovanni Sartor - Javier Bajo - Ugo Pagallo
Date:	16 November 2019

The ESR is recruited for 36 months by Alma Mater Studiorum - Università di Bologna where she/he is enrolled in the doctoral program in "Law, Science, and Technology" and she/he is expected to defend his/her Ph.D. thesis within the duration of the project.

The ESR will be seconded for 6 months at UPM and for 6 months at UNITO

The supervisor of the ESR at UNIBO is Prof. Giovanni Sartor

The supervisor of the ESR at UPM is Prof. Javier Bajo

The supervisor of the ESR at UNITO is Prof. Ugo Pagallo

BRIEF OVERVIEW OF RESEARCH PROJECT AND MAJOR ACCOMPLISHMENTS EXPECTED

Research Title → Governing Algorithms in the Big Data Era — Balancing New Digital Rights

Algorithms govern a large part of our human activities and there is a risk of losing control of individual decisions. Algorithms and information systems increasingly constitute new de facto norms, regulations, duties and the research aim to investigate how the IoE is governed by algorithms, how predictable are those algorithms, and to what extent can the algorithmic paradigm limit the capacity of people to determine their existence.

The majority of the algorithms which govern our society today are artificial intelligent system algorithms. However, currently we cannot understand and interpret these algorithms very well. The research project mainly aims to explore explainable artificial intelligence, a novel field that is very crucial from a legal viewpoint.
Only this way, we may understand and govern the algorithms that govern our society today. During the first year, the necessity of the explainability in AI systems will be explained in terms of accountability, transparency, liability, and fundamental rights & freedoms. The latest explainable AI algorithms introduced by the AI researchers will be examined from technical and law perspective. Their statistical and legal competencies will be analyzed. After detecting the deficiencies of the current solutions, a comprehensive AI system design will be proposed which satisfies not only the statistical requisites; but also, the legal, ethical, and logical requisites.

The success of the research proposed may be measured if the following activities are successfully completed:
(i) a comprehensive examination of the scope of the right to explanation (the RtE) from legal and ethical perspectives to demonstrate why we need to govern the algorithms and why we have to explain how they function;
(ii) researching pioneer jurisdictions on the right to explanation such as the US and the EU;
(iii) revealing the elements contributing to the explainability of AI systems at different stages;
(iv) examination of (a) the popular ML algorithms & (b) the newly developed XAI algorithms, benchmark analysis of their accuracy and explainability levels, and their overall comparison;
(v) designing new XAI systems, XAI algorithms, or proposing a comprehensive roadmap to create explainable AI systems. Therefore, we can truly govern the algorithms in the big data era.

LONG-TERM CAREER OBJECTIVES
(over 5 years)

1. GOALS

I aim to accomplish the following goals:

- Writing a Ph.D. thesis related to the project "Governing algorithms in the Big Data era for balancing new digital rights",
- Publishing two articles in international journals,
- Presenting my work in at least one international conference,
- Successfully completing the deliverable dedicated to me,
- Mastering the applied machine learning using widespread machine learning algorithms such as Tensorflow, Keras, and PyTorch
- Developing a deep understanding of GDPR, its limitations, its pros & cons and using this for the ethical and legal side of my future work

2. WHAT FURTHER RESEARCH ACTIVITY OR OTHER TRAINING IS NEEDED TO ATTAIN THESE GOALS?

I will conduct the following research activities on a regular basis:

1. Comprehensive research on GDPR legislation.
2. Comprehensive research and hard work on applied machine learning.
3. Statistical recaps required to truly analyze the explainable nature of the machine learning algorithms

SHORT-TERM OBJECTIVES
(1-2 years)

1. RESEARCH RESULTS

- Anticipated publications

- A publication on the right to explanation and its scope in terms of GDPR, ECHR, and comparative law (e.g., the U.S. legislation, the EU legislation)
- A publication on the evaluation of the cutting edge XAI algorithms introduced by the researchers in the fields.

- I will participate in all the courses designated by the LAST-JD-RIoE committee
- In addition, the following anticipated conferences and workshops will be given high priority for participation:

JURIX 2019	11-13 December 2019	Madrid, Spain
IRIS 2020	27-29 February 2020	Salzburg, Austria
DLT 2020	4 February 2020	Ancona, Italy
ECAI 2020	8-12 June 2020	Santiago de Compostela, Spain
EGOVIS 2020	14-17 September 2020	Bratislava, Slovakia
EKAW 2020	15-20 September 2020	Bozen – Bolzano, Italy
FOIS 2020	14-17 September 2020	Bozen – Bolzano, Italy
ISAO 2020	September 2020	Bozen – Bolzano, Italy
ISWS 2020	5-11 July 2020	Bertinoro, Italy
LATA 2020	2-6 March 2020	Milan, Italy

2. RESEARCH SKILLS AND TECHNIQUES

1. Developing competence in experimental design, quantitative and qualitative methods, relevant research methodologies, data capture, statistics, analytical skills.
2. Gaining the ability to have original, independent and critical thinking.
3. Improving critical thinking and peer review skills, critical analysis and evaluation of scientific findings.
4. Acquisition of new expertise in areas and techniques related to Explainable Artificial Intelligence (e.g. in GDPR, Applied Machine Learning, and Applied Statistics) and adequate understanding of their appropriate application
5. Foresight and technology transfer, grasp of ethics and appreciation of IPPR

3. RESEARCH MANAGEMENT

Currently, the award received:

- MSCA ITN grant as part of the Horizon2020 project.

During the Ph.D. term, I, as Ph.D. candidate, aim to develop the following research management skills:

1. Successfully identifying and securing possible sources of funding for personal and team research as appropriate.

2. Project management relating to proposals and tenders work programming, supervision, deadlines and delivery, negotiation with funders, financial planning, and resource management.
3. Working with others and in teams and in teambuilding.

4. COMMUNICATION SKILLS

During the Ph.D. term, I, as Ph.D. candidate, aim to develop the following communication skills:

1. Personal presentation skills, poster presentations, skills in report writing and preparing academic papers and books.
2. To be able to defend research outcomes at seminars, conferences, etc.
3. Contribute to promoting public understanding of Artificial Intelligence Field

5. OTHER PROFESSIONAL TRAINING (COURSE WORK, TEACHING ACTIVITY):

I am not involved in teaching or other professional training activities. However, I will take advantage of MOOCs (Massive Open Online Courses) (e.g. Udemy, Coursera, etc.) to improve my skills in addition to the courses at the university.

6. ANTICIPATED NETWORKING OPPORTUNITIES:

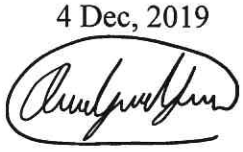
During the Ph.D. term, I, as Ph.D. candidate, will develop/maintain co-operative networks and working relationships as appropriate with supervisor/peers/colleagues within the institution and the wider research community

7. OTHER ACTIVITIES (COMMUNITY, ETC) WITH PROFESSIONAL RELEVANCE:

Currently, N/A

Date & Signature of fellow:

Orhan Gazi Yalcin
4 Dec, 2019



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4 Dec, 2019
Javier Bajo

Date & Signature of supervisor:

Giovanni Sartor
3 Dec, 2019

Ugo Pagallo

ALLEGATO 1 – PIANO DI ATTIVITA'[1]

Career Development Plan - Year 1

Name of ESR:	Yu Liuwen
Department:	Law, Science and Technology
Name of Supervisors:	- Leon van der Torre - Monica Palmirani - Massimo Durante
Date:	07/11/2019

The ESR is recruited for 36 months by Alma Mater Studiorum - Università di Bologna where she is enrolled in the doctoral program in "Law, Science and Technology" and she is expected to defend her PhD thesis within the duration of the project.

The ESR will be seconded for n.6 months at UNIBO and for n.6 months at UNITO(the first year),n.12 months at UL(the second year), n.6 months at UNIBO and for n.6 months at UNITO(the third year).

The supervisor of the ESR at UL is prof. Leon van der Torre.

The supervisor of the ESR at UNIBO is prof. Monica Palmirani.

The supervisor of the ESR at UNITO is prof. Massimo Durante.

BRIEF OVERVIEW OF RESEARCH PROJECT AND MAJOR ACCOMPLISHMENTS EXPECTED (half page should be sufficient)

Research Topic (position n.13) : Risk Analysis and Regulatory Compliance of Distributed Ledger Technologies (DLT) for Transaction and Management of Securities

Title: On the Optimized Utilization of Smart Contracts in DLTs from the Perspective of Legal Representation and Legal Reasoning

Research content :

Smart contracts employ strict and formal languages to describe well-defined categories, predefined conditions and accurately-specified methods fit to reduce system security risk. Obviously, translation errors unavoidably exist in the conversion process, thus subsequently influencing the legal effect of smart contract. These errors will inevitably cause an unreasonable and unfair result on the parties involved in the contracts.

Due to the complexity, contradictoriness, and constantly changing conditions of the law, the

[1] See guidance on how to complete the plana t the end of the document.

analysis, representation, and inference of legal knowledge within smart contracts need more advanced and flexible methods.

As for this research, more efficient and accurate interpretation model of different smart and legal contracts will be further explored, a mature multi-agent system is supposed to be investigated and the analysis of AFwS will be proposed.

LONG-TERM CAREER OBJECTIVES (over 5 years)
1. GOALS
To complete a PhD thesis related to the project which is *Risk Analysis and Regulatory Compliance of Distributed Ledger Technologies (DLTs) for Transaction and Management of Securities* with a title *On the Optimized Utilization of Smart Contracts in DLTs from the Perspective of Legal Representation and Legal Reasoning.* As for this research, the more efficient and accurate interpretation model of different smart and legal contracts will be further explored, a mature multi-agent system is supposed to be investigated and the analysis of AFwS will be proposed.
2. WHAT FURTHER RESEARCH ACTIVITY OR OTHER TRAINING IS NEEDED TO ATTAIN THESE GOALS?
(1) To attend necessary courses offered by LAST_JD; (2) To attend national or international conference/workshop ; (3) To learn more about distributed ledger system and logic-based language;

SHORT-TERM OBJECTIVES (1-2 years)
1. RESEARCH RESULTS
- Anticipated publications: Submitted my proposal to the Doctoral Consortium of Jurix2019. Papers for publications or seminar presentations about legal representation and legal reasoning in blockchain system, and about the argumentation framework with sub-argument relation. Publications will be handled according to a specific plan that will be defined. - Attend conference, workshop and necessary courses; - Give seminar presentations.
- Anticipated conference, workshop attendance, courses, and /or seminar presentations
2. RESEARCH SKILLS AND TECHNIQUES
- Training in specific new areas, or technical expertise etc: (1) Java; (2) Python; (3) Set theory, Graph theory and Function (mathematics);

(4) Machine learning;
(5) Italian ;
(6) Original, independent and critical thinking;
(7) Critical analysis and evaluation of one's findings and those of others ;
(8) Acquisition of new expertise in areas and techniques related to the researcher's field and adequate understanding their appropriate application.

3. RESEARCH MANAGEMENT

(1) Ability to successfully identify and secure possible sources of funding for personal and team research as appropriate.
(2) Project management skills relating to proposals work programming, supervision, deadlines and delivery, negotiation with funders, financial planning, and resource management.
(3) Skills appropriate to working with others and in teams and in teambuilding.

4. COMMUNICATION SKILLS

Objective :
(1) Personal presentation skills, poster presentations, skills in report writing and preparing academic papers and books;
(2) To be able to defend research outcomes at seminars, conferences, etc;
(3) Contribute to promote public understanding of one's own field.

Languages:
(1) English :C1;
(2) Italian:B1;
(3) Luxembourgish:B1.

5. OTHER PROFESSIONAL TRAINING (COURSE WORK, TEACHING ACTIVITY):

(1) Courses about BLOCKCHAIN AND SMART CONTRACT;

(2) Courses about HUMAN COMPUTER INTERACTION;

(3) Courses about MACHINE LEARNING.

(4) Try to be Involved in teaching, supervision or mentoring.

6. ANTICIPATED NETWORKING OPPORTUNITIES:

Develop or maintain co-operative networks and working relationships as appropriate with supervisor, peers, and colleagues within the institution and the wider research community.
Work with researchers, colleagues, and professors in CS to investigate the utility of logic-based smart contracts and possible ways to use them in combination with distributed ledger systems. Work with those who are familiar with law to explore the nature of the law.

7. OTHER ACTIVITIES (COMMUNITY, ETC) WITH PROFESSIONAL RELEVANCE:

To learn skills about programming by attending coding courses and to learn languages like Italian. To know more about the nature of the law from colleagues with law backgrounds.

Date & Signature of fellow:

Date & Signature of supervisors:

Career Development Plan - Year 1

Name of ESR:	**Mirko Zichichi**
Department:	**Universidad Politécnica de Madrid (UPM)** The PhD program is offered by: «Departamento de Inteligencia Artificial» (Official University Department). The ESR develops his activity within the research group «Ontology Engineering Group» (OEG).
Name of Supervisors:	- The supervisor of the ESR at UNIBO is prof. Stefano Ferretti - The supervisor of the ESR at UPM is prof. Víctor Rodríguez Doncel - The mentor of the ESR at UNITO is prof. Massimo Durante
Date:	19 November 2019

BRIEF OVERVIEW OF RESEARCH PROJECT AND MAJOR ACCOMPLISHMENTS EXPECTED (half page should be sufficient)

General overview

The ESR has been recruited for 36 months by Universidad Politécnica de Madrid.

The ESR will be enrolled in PhD programs of both Universidad Politécnica de Madrid ("Doctorate in Artificial Intelligence") and Alma Mater Studiorum University of Bolonia ("Law, Science and Technology"). The ESR is expected to defend his PhD thesis at UPM within the duration of the project. The ESR will be seconded for 5 months at University of Bologna and for 6 months at Università degli Studi di Torino. The ESR will spend his last 6 months at BitNomos srl.

The research project is related to the individuals' location privacy and personal data management:

- Personal data is sometimes concentrated in few points and transacted in opaque transfers without the individual's control or even knowledge.
- Data is stored differently through several data silos, maintained by entities to which it is convenient hampering data exchange and its economical exploitation.
- Individuals are not capable of determining the fate of their personal data, whereas they good be willing to offer it for the social good (e.g. better policy making, research) or just make direct profit from it.

The general objective of the research project is to design methods and systems to support the right of individuals to the protection of their personal data (including location), at the same favoring its portability and economic exploitation and fostering the social good.

In order to attain this, the following sub-objectives must be pursued:

- To design methods and systems that store and transfer personal data in a controlled, transparent and non-centralized manner, avoiding thus the concentration of personal information and its opaque transfers.
- To identify modeling and evaluation methodologies for the analysis of decentralized and complex systems, such as those considered in this domain.
- To specify languages and protocols that favour personal data interoperability.
- To specify the languages and algorithms necessary to represent and reason with policies in smart contracts to govern the access to personal data, enabling the definition of both high-level goals and fined-grained preferences.

LONG-TERM CAREER OBJECTIVES
(over 5 years)

1. GOALS

The ESR is expected to complete a PhD thesis related to the project "Location privacy and inference in online social networks" and then to seek a research position in a research/academic institution or company where he can share his experience and knowledge with others excited about information technology and where he can research, identify, and provide new challenges, perspectives, and approaches to senior management.

2. WHAT FURTHER RESEARCH ACTIVITY OR OTHER TRAINING IS NEEDED TO ATTAIN THESE GOALS?

The background of the ESR in Semantic Web technologies will be complemented by the courses offered at UPM and by his participation in the International Semantic Web Research Summer School in Bertinoro in 2020.

SHORT-TERM OBJECTIVES
(1-2 years)

1. RESEARCH RESULTS

- Anticipated publications

- M. Zichichi, S. Ferretti, and G. D'Angelo, "A distributed ledger based infrastructure for smart transportation system and social good,"
  To appear in Proceedings of the IEEE Consumer Communications and Networking Conference 2020 (CCNC 2020)

- Anticipated conference, workshop attendance, courses, and /or seminar presentations

- JURIX 2019 32nd International Conference on Legal Knowledge and Information Systems December 11-12-13, 2019, Madrid, Spain

- Technical Program Committee Membership:
  International Congress on Blockchain and Applications (BLOCKCHAIN'20, www.blockchain-congress.net) 17th-19th June, 2020, in the city of L'Aquila, Italy.

- Where possible, participation as speaker at university courses and symposia

2. RESEARCH SKILLS AND TECHNIQUES

At the end of this year , the ESR will have acquired skills in areas such as:

- Understanding, testing and advancing complex theories or hypotheses and deploying sophisticated concepts, methodologies and tools in the chosen subject to a very high level
- Acquisition of new expertise in areas and techniques related to the researcher's field and adequate understanding their appropriate application
- Competence in experimental design, quantitative and qualitative methods, relevant research methodologies, data capture, statistics, analytical skills.
- Critical analysis and evaluation of one's findings and those of others

- Foresight and technology transfer, grasp of ethics and appreciation of IPPR.

3. RESEARCH MANAGEMENT

At the end of this year, the ESR will have acquired skills to manage research. In particular:

- Manage projects with uncertain outcomes in diverse settings and organisations.
- Project management skills relating to proposals and tenders work programming, supervision, deadlines and delivery, negotiation with funders, financial planning, and resource management.
- Ability to successfully identify and secure possible sources of funding for personal and team research as appropriate.

This will be materialized by:

- Applying to special recognitions. In UPM: («Premio Extraordinario Doctorado»), «Mención Internacional al Doctorado».
- Voluntarily cooperating in project proposal writing for future Horizon Europe calls.

4. COMMUNICATION SKILLS

At the end of this year, the ESR will have acquired skills to:

- Communicate very complex concepts
- Personal presentation skills, poster presentations, skills in report writing and preparing academic papers and books.
- To be able to defend research outcomes at seminars, conferences, etc.

These skills will be made better by participating in regular research meetings. The ESR will have to present his progress in these events, which can be eventually recorded (videocam) by professional communication experts and further commented.

5. OTHER PROFESSIONAL TRAINING (COURSE WORK, TEACHING ACTIVITY):

At the end of this year, the ESR will have acquired skills to:

- Involvement in supervision or mentoring

During his time at UNIBO, the ESR will have the opportunity to co-direct MSc Thesis of the Master in Computer Science.

6. ANTICIPATED NETWORKING OPPORTUNITIES:

- Develop/maintain co-operative networks and working relationships as appropriate with supervisor/peers/colleagues within the institution and the wider research community

7. OTHER ACTIVITIES (COMMUNITY, ETC) WITH PROFESSIONAL RELEVANCE:

At the end of this year, the ESR will have acquired skills to participate in standardisation bodies.
In particular, during this year, his participation in different W3C Working Groups and W3C Community Groups will be fostered.

Date & Signature of fellow:

19/11/19

Date & Signature of supervisors:

19/11/19

Massimo Di Monda