

## DigForEthics: Conversations on Digital Forensics, Ethics, Law and Artificial Intelligence

Although not necessarily (and not everywhere in the same way) what is ethical is legal, and vice-versa, ethics and law are at the hearth of human societies since their dawn, and their relations have been studied for centuries. This is not the case for the relations between ethics and more recent disciplines like Digital Forensics (DF) and Artificial Intelligence (AI), where the ethical question has been necessarily raised much more recently. Despite their short history, "Ethics in AI" and "Ethics in DF" are emerging as two among the biggest issues of this millenium.

The technologies that drive AI and DF are almost the same all over the world, but law changes from country to country, and not only different cultures follow different ethical principles, but also different individuals belonging to the same cultural group do. When AI is exploited in the domains of DF and Law, their interplay, along with the interplay with specific cultural aspects, makes the ethical question extremely delicate and complex, and for this reason extremely urgent, to address.

The DigForASP COST Action (Digital forensics: evidence analysis via intelligent systems and practices, CA17124, launched on 10th September 2018 for 4 years, <https://digforasp.uca.es/>), thanks to its strongly interdisciplinary nature, is a perfect framework for conversating on AI, DF, Law and Ethics.

In this two days event, judges, lawyers, experts of DF, of AI, and of data privacy will share their point of view on the ethical threats that the adoption of intelligent automated techniques may bring to their profession on the one hand, and how to mitigate them and turn them into opportunities, on the other.

PLATFORM USED:

Microsoft Teams @ UniGe ([Apply for a registration in order to get a Teams invitation](#))

Event organized by the DigForASP COST Action members:

**Viviana Mascardi**  
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**Juan Carlos Nieves**  
Umeå University, Sweden  
Email - [jcnieves@cs.umu.se](mailto:jcnieves@cs.umu.se)



## PROGRAMME (Times are CET)

**JAN 28th 2021**



9.00-9.20:	Welcome and opening
9.20-9.45:	<div data-bbox="399 533 643 785">  </div> <div data-bbox="667 537 909 573"> <p><b>Virginia Dignum</b></p> </div> <div data-bbox="667 606 1268 642"> <p><b>Title:</b> Responsible AI - from principles to action</p> </div> <div data-bbox="391 676 1417 1050"> <p><b>Abstract:</b> Every day we see news about advances and the societal impact of AI. AI is changing the way we work, live and solve challenges but concerns about fairness, transparency or privacy are also growing. Ensuring an ethically aligned purpose is more than designing systems whose result can be trusted. It is about the way we design them, why we design them, and who is involved in designing them. If we are to produce responsible trustworthy AI, we need to work towards technical and socio-legal initiatives and solutions which provide concrete instructions, tools, and other means of dictating, helping, and educating AI practitioners at aligning their systems with our societies' principles and values.</p> </div> <div data-bbox="391 1087 1417 1495"> <p><b>Bio:</b> Virginia Dignum is Professor of Responsible Artificial Intelligence at Umeå University, Sweden and associated with the TU Delft in the Netherlands. She is the director of WASP-HS, the Wallenberg Program on Humanities and Society for AI, Autonomous Systems and Software. She is a member of the Royal Swedish Academy of Engineering Sciences, a Fellow of the European Artificial Intelligence Association (EURAI), member of the European Commission High Level Expert Group on Artificial Intelligence, of the working group on Responsible AI of the Global Partnership on AI (GPAI), of the World Economic Forum's Global Artificial Intelligence Council, of the Executive Committee of the IEEE Initiative on Ethically Aligned Design, and a founding member of ALLAI-NL, the Dutch AI Alliance. Her book "Responsible Artificial Intelligence: developing and using AI in a responsible way" was published by Springer-Nature in 2019.</p> </div>
9.45-10.10:	<div data-bbox="399 1568 643 1829">  </div> <div data-bbox="667 1568 862 1604"> <p><b>Carles Sierra</b></p> </div> <div data-bbox="667 1638 1045 1673"> <p><b>Title:</b> Community oriented AI</p> </div> <div data-bbox="667 1707 1417 1843"> <p><b>Abstract:</b> Artificial Intelligence can help adapting socio-technical systems to particular legal and cultural settings. Instead of a dystopia where AI dominates human societies, AI can empower human communities to control their</p> </div>

	<p>interaction software. That is, AI can put humans in control. I will illustrate this vision of AI with an application that supports mutual help.</p> <p><b>Bio:</b> Carles Sierra is Director of the Artificial Intelligence Research Institute (IIIA) of the Spanish National Research Council (CSIC) located in Barcelona. He is the President of EurAI. He has been contributing to Artificial Intelligence research since 1985 in the areas of Knowledge Representation, Auctions, Electronic Institutions, Autonomous Agents, Multiagent Systems and Agreement Technologies. He is or has been a member of several editorial boards of journals, including AIJ and JAIR, two of the most prestigious generalist journals, and was the editor in chief of the JAAMAS journal, specialized in autonomous agents. He organized IJCAI, the most important international artificial intelligence conference in 2011 in Barcelona and was the President of the IJCAI Program Committee in 2017 in Melbourne. He is a Fellow of the European Association of AI, EurAI, and recipient of the ACM/SIGAI Autonomous Agents Research Award 2019.</p>
<p>10.10-10.30:</p>	<p>Coffee Break</p>
<p>10.30-10.55:</p>	<div style="display: flex; align-items: flex-start;">  <div style="flex-grow: 1;"> <p><b>Amedeo Santosuosso</b></p> <p><b>Title:</b> Risks and Rights: the need for methods of measurement in AI</p> <p><b>Abstract:</b> According to the White Paper on Artificial Intelligence – A European approach to excellence and trust the EU Commission delivered on February 19th, 2020, in order to achieve the desired trust it is essential to have a clear European regulatory framework that «should be consistent with other actions to promote Europe’s innovation capacity and competitiveness in this field [...], ensure socially, environmentally and economically optimal outcomes and compliance with EU legislation, principles and values». Unfortunately, the boundary line of high-risk, even if it seems smart in theory, is quite vague and not defined in a way clear and easily understandable by all the parties concerned. Several questions have been stressed by commentators: if criteria are cumulative, what about the case when only one of the two criteria occurs? The high risk we are talking about what is it referring to? A dangerous situation for whom? In a situation like this, it is necessary to identify objective criteria and parameters in order to define/measure both the risk and the injury or compression of rights and freedoms that come as a result of exposure to those risks.</p> <p><b>Bio:</b> Amedeo Santosuosso has had different position in the judiciary: - From 2014 to February 2019: President of the Chamber specialized in IPR, antitrust and unfair competition, Court of Appeal of Milan (Italy). - From 2014 to February 2019: President of the First Chamber, Court of Appeal of Milan (Italy). - From 2014 to February 2019: President responsible of Technological Innovation at the</p> </div> </div>

	<p>Court of Appeal of Milan. - From December 2015, Coordinator of the national pilot project Justech (a project promoted and funded by the Ministry of Justice aiming to improving the use of informatics in criminal and civil courts).</p> <p>He is professor of Law, Science and Emerging Technologies, School of Advanced Studies, IUSS Pavia (I). Since April 2018, he is World Commission on the Ethics of Scientific Knowledge and Technology (COMEST -UNESCO) Member. From 2004-2005, he was professor of Law, Science and New Technologies at the Department of Law, University of Pavia (I). From 2015, he is Scientific Director of the Interdepartmental Research Center European Centre for Law, Science and New Technologies (ECLT), University of Pavia (I). In 2015, he was appointed fellow at the Center for Legal Innovation (CLI), Vermont Law School (USA). Since 2014, he is President of the Interdepartmental Research Center European Centre for Law, Science and New Technologies (ECLT), University of Pavia (I).</p>
10.55-11.20:	<div style="display: flex; align-items: flex-start;">  <div style="flex-grow: 1;"> <p><b>Vicenç Torra</b></p> <p><b>Title:</b> Data privacy - privacy models and data utility</p> <p><b>Abstract:</b> Data privacy studies how to take advantage of data without disclosure of sensitive information. Privacy models, computational definitions of privacy, permit us to define when data and models are considered safe with respect to disclosure. Data protection mechanisms are defined to be compliant with privacy models, and to achieve a good trade-off between disclosure risk and data utility.</p> <p><b>Bio:</b> Vicenç Torra is currently a WASP professor on AI at Umeå; University, Sweden. He is an IEEE and EurAI Fellow. His fields of interests include data privacy, approximate reasoning (fuzzy sets, fuzzy measures/non-additive measures and integrals) and decision making. He has written seven books including "Modeling decisions" (with Y. Narukawa, Springer, 2007), "Data Privacy" (Springer, 2017), and "Scala: from a functional programming perspective" (Springer, 2017). He is founder and editor of the Transactions on Data Privacy, and started in 2004 the annual conference series Modeling Decisions for Artificial Intelligence (MDAI).</p> </div> </div>
11.20-13.00:	Round Table (chair: Viviana Mascardi)
13.00-14.00:	Lunch Break
14.00-16.00:	Discussion open to all the registered attendees

**PROGRAMME (Times are CET)**  
**JAN 29th 2021**

9.00-9.20:	Welcome and opening
9.20-9.45:	<div data-bbox="402 590 667 898" data-label="Image">  </div> <p data-bbox="690 590 966 621"><b>Stefania Costantini</b></p> <p data-bbox="690 659 1427 726"><b>Title:</b> Exploiting logic-based approaches for machine ethics in the legal and DF fields</p> <p data-bbox="389 764 1427 1203"><b>Abstract:</b> Autonomous Intelligent Systems are designed to reduce the need for human intervention in many contexts, so as to relieve humans of repetitive, mundane and boring tasks. However, the full benefit of these new systems will be attained only if they are aligned with society's values and ethical principles. Adopting ethical approaches to building such systems has been attracting a lot of attention in the recent years. Machine ethics has in fact evolved as a new field aiming at creating machines able to compute and choose the best ethical course of action. Logic-based approaches have a great potential to model moral machines, in particular via non-monotonic logics, due to many factors. In our presentation, we review the state of the art of logic-based approaches concerning machine ethics, and discuss their applicability in sensitive fields such as the legal field, and the digital forensics field.</p> <p data-bbox="389 1241 1427 1717"><b>Bio:</b> Stefania Costantini is Full Professor in Computer Science at the Department of Computer Science and Engineering and Mathematics (DISIM). She is the Head of the research group AAAI@AQ (Autonomous Agents and Artificial Intelligence at the University of L'Aquila). She has more than 150 publications. Her research interests are in (theory and practice of) Artificial Intelligence and Computational Logic, including Intelligent Software Agents and Multi-Agent Systems, Answer Set Programming, Non-Monotonic Reasoning, Knowledge Representation, Cognitive Robotics. She invented, defined and coordinated the first implementation of the DALI agent oriented logic programming language. She served in the Program Committee of the main Conferences of her fields of interest, and she is a member of the Editorial Board of the journal Theory and Practice of Logic Programming (Cambridge). She is currently the President of the Italian Association of Computational Logic (GULP), and Member of the Board of the Italian Association for Artificial Intelligence (AIxIA).</p>

<p>9.45-10.10:</p>	<div data-bbox="409 262 712 596" data-label="Image">  </div> <div data-bbox="732 262 1112 294" data-label="Section-Header"> <p><b>Francesca Alessandra Lisi</b></p> </div> <div data-bbox="732 333 1396 401" data-label="Text"> <p><b>Title:</b> Recent results and activities in Trustworthy AI: A focus on the gender dimension</p> </div> <div data-bbox="391 438 1414 674" data-label="Text"> <p><b>Abstract:</b> Ensuring diversity, non-discrimination and fairness in AI is among the requirements listed in the "Ethics Guidelines for Trustworthy AI" published by the European Commission in 2019. In particular, this is a crucial aspect to be ensured in the legal and forensics domain. In this talk I will briefly report on recent results and activities in Trustworthy AI, with a focus on the gender dimension.</p> </div> <div data-bbox="391 711 1414 1392" data-label="Text"> <p><b>Bio:</b> Francesca A. Lisi, PhD in Computer Science, is currently an Adjoint Professor at the Dept. of Computer Science of the University of Bari (Italy). Since her PhD studies, she has been interested in the cross-fertilization of results obtained in different areas inside AI and also outside AI, notably in databases. She has investigated several logic-based methods for Machine Learning and Data Mining, with applications ranging from Geographical Information Systems to Ontologies and the Semantic Web. She is (co-)author of about 100 scientific articles published in journals and peer-reviewed conference proceedings. She serves as PC member in major international AI conferences such as IJCAI, AAAI and ECAI. She has co-chaired several events for AI specialists, and contributed to the dissemination of AI-related scientific knowledge and to the debate around socio-ethical implications of AI, by organizing or participating in public events and by working with the media (press, blogs, radio). Francesca is elected board member of the Italian Association for Artificial Intelligence (AIxIA) since 2013, and of the Italian Chapter of the Association for Logic Programming (GULP) since 2009. She is substitute member for Italy in the Management Committee of the following COST Actions: "DigForASP - Digital forensics: evidence analysis via intelligent systems and practices" (2018-2022) and "EUGAIN - European Network For Gender Balance in Informatics" (2020-2024). In DigForASP she plays also the role of Science Communication Manager.</p> </div>
<p>10.10-10.35:</p>	<div data-bbox="391 1461 621 1793" data-label="Image">  </div> <div data-bbox="643 1461 837 1493" data-label="Section-Header"> <p><b>David Billard</b></p> </div> <div data-bbox="643 1533 1414 1600" data-label="Text"> <p><b>Title:</b> Challenges in using data anonymization for protecting people privacy in AI-augmented criminal investigations</p> </div> <div data-bbox="643 1638 1414 1808" data-label="Text"> <p><b>Abstract:</b> Through very concrete examples, we will dive into anonymization challenges when conducting a criminal investigation. We will outline how AI can help investigators in answering questions about people behavior and thereby offering new opportunities in conducting forensic work.</p> </div>

	<p><b>Bio:</b> David Billard received a PhD in computer science from University of Montpellier, France, in 1995. He worked at the University of Geneva, Switzerland, from 1995 to 2000 as a research fellow, then he headed the University software developments until 2008. Since 2008 he is associate professor at the University of Applied Sciences in Western Switzerland in Geneva. Simultaneously to this academic career and since 1999, he is a sworn expert to the courts in France and Switzerland (French speaking cantons), as well as to the International Criminal Court in The Hague (Netherlands), and participated to more than 200 criminal investigations and 100 civil litigations. He publishes regularly about digital forensics and privacy. Prof. David Billard is involved in several program committees, like DFRWS EU or Forensics International.</p>
10.35-10.55:	Coffee Break
10.55-11.20:	<div data-bbox="396 747 643 1016" data-label="Image">  </div> <p><b>Mattia Epifani</b></p> <p><b>Title:</b> Digital Forensics and AI: actual state in commercial tools</p> <p><b>Abstract:</b> A practical presentation on DF tools used in our daily job will be given during the presentation; a special attention will be paid to some of their AI-based features</p> <p><b>Bio:</b> Mattia is CEO of Reality Net System Solutions, an Italian infosec and digital forensics consulting company, where he works as a digital forensics analyst and expert for judges, prosecutors, lawyers, and private companies, at times serving as an expert court witness. He obtained a degree in computer science from the University of Genoa, Italy and received post-graduate training in computer forensics and digital investigations in Milan. He also has several certifications in digital forensics and ethical hacking, including GASF, GCWN, GNFA, GREM, GCFA, GMOB, GCFE, ACE, AME, CCE, CEH, CHFI, CIFI, and MPSC. A regular speaker on digital forensics at Italian and European universities and events, Mattia authored Learning iOS Forensics and Learning iOS Forensics, Second Edition, edited by PacktPub. He is also a member of the Digital Forensics Association (DFA), International Information System Forensics Association (IISFA), ONIF (Osservatorio Nazionale Informatica Forense) and Tech and Law Center.</p>
11.20-11.45:	<div data-bbox="399 1558 660 1816" data-label="Image">  </div> <p><b>Andrea Stanchi</b></p> <p><b>Title:</b> Ethics &amp; Tech: does Statute's of Workers' Right have something to teach?</p> <p><b>Abstract:</b> The talk will discuss use and abuse of data and the contractualization of constitutional principles, and how an old lesson can become a modern way to deal with AI.</p>

	<p><b>Bio:</b> Andrea Stanchi graduated in Law from the University of Milan in 1988 and is Managing Partner of the Stanchi Studio Legale firm. He has been a member of the Milan Bar Association since 1995 and is admitted to appear before the Italian Supreme Court. He has collaborated with the chair of Trade Union Law at the University of Milan. Since 2016, he has been a member of Organismo Congressuale Forense with responsibility for coordinating the working group on Law, Ethics and Technology. Since 1991, he has been Secretary of the Milan Section of the Domenico Napoletano National Centre for Labour Law Studies and a member of the National Board of Directors of the same association; he was a member of the Employment Law Commission of the International Union of Lawyers until 2013; he is a founding member of the Italian Employment Lawyers Association (AGI), of which he was national secretary until 2008 and then President of the Lombardy Section until 2015; he is a member of the European Employment Lawyers Association (EELA); he was a member of the Italian Labour Law and Social Insurance Association (AIDLASS); he is a member of the Italian Industrial Relations Association (AISRI). He is the editor responsible for Italy of the International Law Office in the area of Employment law. He was co-designer and co-editor from 2004 to 2010 of Giuslavoristi.it.</p>
11.45-13.00:	Round Table (chair: Juan Carlos Nieves)
13.00-14.00:	Lunch Break
14.00-15.50:	Discussion open to all the registered attendees
15.50-16.00:	Closing