WORKSHOP / TUTORIAL:

4th International Workshop on Intelligent Crisis Management Technologies (ICMT)

Big Data Analytics and AI for Disaster Risk Reduction 19th

International Conference on Information Systems for Crisis Response and Management

Workshops and Tutorial - May 22nd, 2022

Main Conference – May 23nd – 25th, 2022

Tarbes, FRANCE

https://iscram2022.enit.fr/

PLEASE CHARACTERIZE YOUR PROPOSAL:

Characteristics	Your Choice
Workshop or Tutorial	Workshop
Possible Formats: • Hands-on session; • Panels, posters or presentations with active interactions with attendees; • Practitioner-researcher task co-design and validation session; • Personalized rapid prototyping and evaluation with the help of practitioners; • Software tutorials and demos; • Dialogue between practitioners and researchers on specific topics, focused on the information needs of responders in various scenarios; • Research grant accountability and practical research impact.	Dialogue between practitioners and researchers on specific topics, focused on the information needs of responders in various scenarios;
Possible Topics: • Cross-border crisis management; • Agent-based modeling; • Multi-modeling / Model coupling / Hybrid modeling for crisis management; • Modeling human behaviors; • Innovative Tools and Technologies for Crisis Management (Virtual Reality, machine learning, etc.); • Participatory Design, Open Innovation, Agile Methods for design; • Resilience of systems; • Explicability and transparency of crisis management solutions: trust, acceptability, accountability; • Ethics in crisis management; • Other	• Cross-border crisis management; • Agent-based modeling; • Multi-modeling / Model coupling / Hybrid modeling for crisis management; • Innovative Tools and Technologies for Crisis Management (Virtual Reality, machine learning, etc.);

INTRODUCTION TO THE WORKSHOP/TUTORIAL

Major disasters create extreme stresses on the building elements of a community. Until now, a splintered structure dominated the emergency management landscape, leaving each community or county responsible for preparing for the disasters. This fragmented approach often creates significant risk exposures to communities, and limited resources result in significant loss of life and property. Given the advancements of Information Technologies lately, the response planners and responders are able to exploit a wide variety of ICT technologies and tools to assist them during an incident. EU research is rather interested in this domain, which is also reflected by relevant EU H2020 co-funded projects like beAWARE, SAFERS, INGENIOUS, CURSOR, aqua3S, IN-PREP, NIGHTINGALE, FIRELOGUE, FIRE-RES, DRYADS and SILVANUS.

Big Data and Artificial intelligence (AI) technologies, in particular affected by machine and deep learning paradigms, are advancing at an astounding pace and appear to have the potential to significantly enhance disaster risk reduction, through their application, for instance, in (i) computer vision tools for automated event detection, etc. (ii) autonomous robotic systems and IoT sensors, (iii) Web and social data mining, (iv) predictive analytics for optimising end-users resources, and others.

Many countries are exploring AI technologies for disaster management, but adoption is still pending in several cases as important issues (such as the auditability of AI systems and privacy concerns) need to be resolved. This workshop aims to provide a forum to advance the understanding of the current and prospective opportunities and risks of AI for disaster management through discussing the current status of AI technologies, their potential applications, as well as the ethical, legal, and social implications posed by the adoption of these technologies. The workshop targets end users, industry partners, academic researchers, and civil society. The main outcome of the workshop will be a white paper which will outline the future directions of Big Data and AI for Disaster Risk Reduction.

This is the fourth ISCRAM ICMT workshop following the very successful ones in ISCRAM 2018 and 2019 and 2021.

WORKSHOP TOPICS
- *Information systems for crisis planning*
- *Information systems for crisis response*
- *Preparedness and Response Planning*
- *Cross-agency interoperability (technical & procedural/organisational)*
- *Scenario building*
- *Training tools for response planning*

PRESENTERS' RECRUITMENT

ICMT is co-organised by members of large scale European research projects beAWARE, SAFERS, IN-PREP, CURSOR, aqua3S, INGENIOUS, NIGHTINGALE, FASTER, SHELTER, FIRELOGUE, and DRYADS that exhibit research in the area of technologies and policy dialogues for crisis management. Due to the dissemination policies of the projects, a significant number of partners of the consortia (both researchers and practitioners) is expected to participate in the workshop and interact with the rest of the participants.

We also plan to invite several key-note speakers with great experience in disaster management domain. The visibility of the researchers of the EU projects, which are involved in the workshop organisation as organisers and program committee members will allow for attracting 2 key-notes. Moreover this is the third edition of ICMT following the successful events in ISCRAM 2018 and 2019 and we expect a high participation also due to the high interest of

the topics that are interesting for researchers in the broad area of technologies for crisis management.

WORKSHOP STRUCTURE

ICMT will be a 2 hour workshop. We expect to have two main sessions: the first with the keynotes focusing on technological Big Data and AI trends of crisis management and state of the art technologies together with novel works and the second one will be a brainstorming session that will outline and create the white paper based on a panel discussion with experts and the audience.

The second part of the workshop is an interactive session where the broader audience gets the opportunity to have a deeper look and discuss the presented solutions. Then a discussion regarding the feedback on the keynotes, the broader experiences of the audience and the question which challenges and trends can be identified in the domain will be take place. The workshop output will be a set of specific ideas and recommendations based on the experience that the participants had and the relevant discussions.

CHAIRS

Anastasios Karakostas*

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DRAXIS Environmental

Dr. Anastasios Karakostas (m) received the Degree in Computer Science and the PhD degree in Computer Science Aristotle University of Thessaloniki Greece. He was a Researcher with ITI- CERTH. Currently, he is Managing Director in DRAXIS environmental.

He was a senior researcher in CERTH and deputy coordinator and scientific manager of the H2020 Disaster Management projects aqua3S and beAWARE. beAWARE proposes an integrated solution to support forecasting, early warnings, transmission and routing of the emergency data, aggregated analysis of multimodal data and management the coordination between the first responders and the authorities.

He has also participated in numerous European and national research projects and is the author of more than 60 publications in refereed journals and international conference. His research interests include decision support systems, semantic multimedia analysis, ontologies and semantic information modeling and reasoning. He has served as a reviewer in international Journals such as Computers and Education, IEEE Transactions on Learning Technologies and as Technical program committee in well reputed conferences and workshops such as CSCL, IEEE ICALT.

	He has been chair of the ICMT 2018 and ICMT 2019 in ISCRAM 2018 and 2019, one of the organizers of the IEEE International Conference on Intelligent Networking and Collaborative systems (INCoS 2010) and 2018 IEEE Image, Video, and Multidimensional Signal Processing (IVMSP) Workshop. Anastasios Karakostas will be present at the ISCRAM conference and the ICMT workshop.
	Stefanos Vrochidis *stefanos@iti.gr* Information Technologies Institute - Centre for Research and Technology Hellas Dr. Stefanos Vrochidis received the Diploma degree in Electrical Engineering from Aristotle University of Thessaloniki, Greece, the MSc degree in Radio Frequency Communication Systems from University of Southampton and the PhD degree in Electronic Engineering from Queen Mary University of London. Currently, he is a Senior Researcher with ITI-CERTH and co-founder of CERTH-ITI's spin off Infalia. His research interests include semantic multimedia analysis, indexing and retrieval, data mining, web and social media monitoring, as well as security applications (including crisis management). Dr. Vrochidis has participated in more than 30 European and National projects (e.g. aqua3S, EOPEN, beAWARE, V4Design, etc.), in 3 as Project Coordinator, 2 as Deputy project Coordinator and in 5 as Scientific or Technical Manager, dealing with analysis and retrieval of multimedia information. Stefanos Vrochidis has been among the organizers of Environmental Multimedia Retrieval 2014 (EMR) and EMR 2015 workshops held in ICMR 2014 and 2015 respectively. He was also member of the organization team for the European Summer School in Information Retrieval (ESSIR 2015) and the International Workshop on Multimedia Forensics and Security 2015 (MFSec) and MFSec 2017 in ARES 2015 and ICMR 2017 respectively and co-organizer of the CyberDD2017 (1st Intern. Workshop on Cyber Deviance Detection) collocated with WSDM 2017, and ICMT 2018 and 2019 collocated with ISCRAM 2018 and 2019. He was also among the organizers of relevant special sessions in MMM2017, CBMI 2018 and MMM2020. He has edited 2 books and authored more than 180 related scientific journal, conference and book chapter publications. He has served as a reviewer in international Journals such as Multimedia Tools and Applications, IEEE Transactions on Multimedia and as Technical program committee in well reputed conferences and workshops such as ICMR, ACM Multimedia, ICME, ECIR, ICIP, CIKM and FOSINT.

Claudio Rossi

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LINKS Foundation

Claudio Rossi, after a double bachelor's degree from the Politecnico di Torino (Polito) and the Institut National Polytechnique de Grenoble (INPG) he obtained a Master of Science in Electrical and Computer Engineering from the University of Illinois at Chicago (UIC) in 2005. He graduated in Electronics from Polito with summa cum laude. He worked as a software analyst at Consorzio per il Sistema Informativo (CSI) and as a project manager at Fiat Group Automobiles (FGA). He led the realization of a new passenger car plant in India and supported the definition of lean manufacturing best practices and standards. From June 2010 to July 2014 he worked for the Telecommunication Group (DET) of Polito as project manager, software analyst, programmer, and system admin, mainly focusing on the realization of a novel peer-to-peer social network, and on interference estimation and classification techniques using innovative algorithms and Software Defined Radios. He was a researcher intern at Telefonica I+D and in Dec. 2013 he obtained his PhD from Polito with the thesis titled "Cooperation Strategies for Enhanced Connectivity at Home". He is now a senior researcher and project manager at LINKS Foundation: a private no profit ICT oriented research centre located in Turin, Italy, where he leads international research projects funded by the H2020 framework, with a focus on the security work programme. He was the project manager and technical lead of the H2020 I-REACT project, which aimed to exploit advanced cyber technologies in order to increase resilience to disasters caused by climate-induced natural hazards. He is task and work package leader in several H2020 projects (VISCA, FASTER, SHELTER) and he is the project coordinator of SAFERS, an new H2020 project on wildfire management. His current research interests include the use of Artificial Intelligence for the creation of innovative data-driven services, crowdsourcing approaches for Disaster Risk Reduction (DRR), social media analysis. He authored more than 30 peer-reviewed publications, co-authored the Global Assessment Report 2019 by UNDRR, and he is supporting the Joint Research Center in the realization of the upcoming "Science for Disaster Risk Management" flagship series, published by the Disaster Risk Management Knowledge Centre (DRMKC) by the end of 2020. He had roles in Technical Programme Committees of several international scientific conferences, organized and chaired international workshops on novel ICT solutions

	in support of Disaster Risk Reduction (ISCRAM 2019, ISCRAM 2018)
	He has served as a reviewer in international Journals such as Concurrency and Computation: Practice and Experience, IEEE Transactions on Multimedia and as Technical program committee in well reputed conferences and workshops such as IEEE ICNC, IEEE CLOUDTECH, ACM I-TENDER (co-located with ACM CoNEXT), IEEE Data Science for Emergency Management (co-located with IEEE International Conference on Big Data),
	Evangelos Sdongos *e.sdongos@astrial.de* ASTRIAL GmbH – www.astrial.de Mr. Evangelos Sdongos is co-founder and Managing Director of ASTRIAL GmbH, specialised in Geo-spatial Command and Control and Incident Management Systems for Public Safety Organisations such as Fire Brigades, Law Enforcement, Coast Guards, Civil protection agencies and Critical Infrastructure operators. He holds a MEng. in Telecommunications and Information Technology from the Electrical & Computer Engineering Department of Patras University and a MBA from Hellenic Open University. He is currently PhD candidate at National Technical University of Athens. He has also published several articles in book chapters, journals and conference proceedings. He has more than ten-year experience in corporate, academic and public sectors working in the fields of engineering, project management and business innovation, leading multi-disciplinary teams of engineers and technologists. Between 2013-2020 he worked as a Senior Researcher at ICCS, being also the Team Leader of the Security and Crisis Management Team. His interests include mobile/wireless telecommunication technologies, sensors and sensor networks, IoT and M2M, embedded systems, cybersecurity and unmanned platforms (UxVs) with emphasis to security and crisis management applications such as next generation emergency services, disaster risk reduction, critical communications, border surveillance, asset-resources-infrastructure monitoring and situational awareness in crisis environments. He is mostly active in the field of Public Safety and Security under several domains (Civil Protection, Crisis management, Border Surveillance, Transport, Smart Cities, Critical Infrastructure, ICT) focusing on uptake of novel technologies for improving operational procedures and decision making. He has been one of the founders of ASTRIAL GmbH (www.astrial.de/) and he is appointed with the role of the Managing Director of the company. He has previous experience running track at ISCRAM and more precisely he has co-chaired "Monitoring and Resilience of Critical Infrastructure in the hyper-connected

	society" track during 2017 ISCRAM in Albi, France and he has been the chair of the Track: "Technologies for First Responders" since ISCRAM 2020. Evangelos will be present at the ISCRAM conference and the ICMT workshop.
	Spyridon Kintzios *sp.kintzios@iti.gr* Information Technologies Institute - Centre for Research and Technology Hellas Captain Hellenic Navy (ret) Spyridon Kintzios (M) is a naval engineer, holding a MScs in Naval Architecture &amp; Marine Engineering by National Technical University of Athens, in the area of maritime transport. He also holds Diploma In Negotiations by Athens University of Economics and Business. He has taken part in several training courses relevant to engineer and in Damage Control (USA, Newport, RI), Disaster Preparedness and CBRN Ops planning and executing (USA, Ft Leonard Wood, MO), Crises Management (DE, Federal Academy for Civil Protection and Civil Defence). In standardization area he has been qualified as ISO 9001 auditor. Ending the fleet service, including a FOST's (Flag Officer Sea Training) successful evaluation as Damage Control Officer of HS Lemnos, he was actively involved in national and multinational exercises regarding Crises Management and CIMIC (Civil Military Cooperation). In parallel ha was research projects, through his service as Head of Joint CBRN Office, Hellenic MoD. He has served as national representative in EDA forum, NATO Working Groups concerning security and defence topics and member of CERIS. He has served as Head of R&D Department of National MoD. He is co-author in articles, and papers concerning Crisis Management Response Systems and regular speaker in University of Athens Medical School Postgraduate program. He has participated in HORIZON2020 projects (TOXI-Triage, CIVILnEXt, MARISA, RANGER, ARESIBO, etc). After his retirement he works as Research associate in CERTH. He is also member of advisory and security boards in other related to security field projects and NCP for Security Scrutiny Committee.

	Maike Overmeyer maike.overmeyer@int.fraunhofer.de Fraunhofer Institute Maike Overmeyer joined the Fraunhofer Institute for Technological Trend Analysis in early 2021 as a research associate. In her role as part of the team for Public Technology and Innovation Planning she is actively engaged in a number of different national and EU-level research projects. Ms Overmeyer holds a Master's degree in International Relation/Peace and Conflict Studies from Frankfurt University and the Technical University of Darmstadt. During her studies Ms Overmeyer worked at the Peace Research Institute Frankfurt and the Federal Academy for Security Policy. She is involved in the management of the EU project FIRELOGUE (Cross-sector dialogue for Wildfire Risk Management) dealing with holistic policy design through stakeholder integration.
	Katerina Margariti katerina.margariti@accelligence.tech ACCELIGENCE Ltd. Mrs. Katerina Margariti serves as Chief Innovation Officer at ACCELIGENCE Ltd. Cyprus and the CEO of ACCELIGENCE Ltd. branch in Greece. She received her Diploma in Physics from the University of Athens and a Joint Master's Degree in Telecommunication Systems from the same university. Currently, she works towards her PhD in the Dpt. of Informatics and Telematics at the Harokopio University of Athens, in Optical Systems. Katerina has over ten years of professional experience in the ICT sector, serving in several technologies and product development positions. Katerina has also acted as a Quality and Information Security Manager in various companies. She has experience participating in numerous EU and national funded research projects (DICONET, SARDANA, EUROFOS, VICINITY, PROCETS, InDeal, NAIADES, KYKLOS 4.0, METICOS, etc.), as well as national and international government tenders. She has also served as an H2020 project manager and Deputy Project Coordinator and coordinated all actions concerned with the submission of several successful H2020 research proposals (e.g., LAW-GAME, DRYADS etc.). She is the (co)author of 6 peer-reviewed journals and conference proceedings. In DRYADS (A Holistic Fire Management Ecosystem for Prevention, Detection and Restoration of Environmental Disasters), Katerina is involved in several technical tasks related to the development of UAV technologies for forest surveillance, seeding and firefighting applications.

Krishna Chandramouli

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Dr. Krishna Chandramouli (male), PhD (Lon), PhD (Lon), M. Tech, B. E, MIET, is a technical director at Venaka Treleaf GbR and has more than 15 years of research experience in the field of computer vision technologies. He holds dual PhD degrees from University of London in 2009 with specialization in Semantic Video Analytics and in 2019 on the interoperability of metadata models. He is a recognized expert in the use of video processing for semantic analysis of multimedia content. His expertise on Big Data Analytics has been gathered over many years of participation in several international benchmarking activities that are related to Media standardisation as MPEG. Dr. Chandramouli has executed several key projects in the domain of knowledge representation for geospatial content analysis, media transmission and forensic security for big-data platform. He has also been a key contributor for EU funded projects namely, FP6 NoE K-Space, FP7 IP MESH, FP7 STReP PAPYRUS, FP7 STReP RUSHES, FP7 NoE PetaMedia and FP7 NoE 3DLife, FP7 Advise, FP7 LASIE, H2020 SafeShore, H2020 COGNITUS, H2020 MAGNETO, H2020 DEFENDER, H2020 PERSONA. Recently he has been nominated to represent UK COST management committee of Leading Platform for European Citizens, Industries, Academia and Policymakers in Media Accessibility (LEAD-ME) project (CA19142). He is currently leading the scientific coordination of H2020 SILVANUS Project.

Corresponding Chair