

JOWO 2023

The Joint Ontology Workshops

Proceedings of the Joint Ontology Workshops 2023
Episode IX: The Quebec Summer of Ontology

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and for the workshops

CAOS | WGO | Onto4Fair | IFOW
OSS | KM4LAW | MK | FOUST

JOWO 2023 Workshop chairs

G. Righetti, S. De Giorgis, M. M. Hedblom, O. Kutz	(CAOS VII)
B. Brodaric, M. Gruninger, T. Hahmann	(WGO)
D. Dooley, M. Lange, H. K. McGinty, A. Sehar, R. Cameron	(IFOW)
B. Gajderowicz, D. Rosu, J. Hastings	(OSS)
D. Audrito, L. Di Caro, F. Grasso, R. Nai, E. Sulis	(KM4LAW)
L. Bozzato, T. Hahmann, C. Shimizu, A. Zimmermann	(MK 2023)
F. Toyoshima, R. Baratella, O. Kutz, S. Borgo	(FOUST VII)

FOIS 2023 Satellite Events chairs

A. Zimmermann, G. Righetti	(Early Career Symposium)
S. de Cesare, T. P. Sales,	(Ontology Showcase and Demonstrations)

<https://www.iaoa.org/jowo/2023/>

PREFACE

JOWO – The Joint Ontology Workshops

These proceedings present the papers and extended abstracts that took part in the Joint Ontology Workshops (JOWO'23): Episode IX: The Quebec Summer of Ontology.

Yearly organised, JOWO is one of the main events of the research mission of the International Association for Ontology and its Applications (IAOA). Taking the form of an umbrella conference, each year JOWO hosts a series of workshops and tutorials that, together, address a wide spectrum of topics related to theoretical and applied ontology research. Traditional domains include areas in the full span of cognitive science and humanities, knowledge representation and conceptual modelling, artificial intelligence and robotics, logic and philosophy, and linguistics and natural language processing. With such an interdisciplinary outlook, the purpose of JOWO is to provide a platform for the diverse communities interested in building, reasoning with, and applying formalised ontologies.

Running since 2015, each edition of JOWO has its own character with a different set of workshops and tutorials—depending on the selection made by the yearly organisational team and reflecting the respective local research communities and global research trends. As an umbrella event covering all angles of the IAOA community, and since 2020 running yearly in conjunction with the IAOA flagship conference FOIS ‘Formal Ontology in Information Systems’, the Joint Ontology Workshops JOWO continue to grow in importance and influence.

JOWO 2023 Workshops

CAOS VII

7th International Workshop on Cognition And Ontologies

Programme Chairs

Guendalina Righetti	Free University of Bozen-Bolzano, Italy
Stefano De Giorgis	University of Bologna, Italy
Maria M. Hedblom	Jönköping University, Sweden
Oliver Kutz	Free University of Bozen-Bolzano, Italy

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Taisuke Akimoto	Kyushu Institute of Technology, Japan
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Roberta Ferrario	ISTC-CNR Trento, Italy
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Torsten Hahmann	University of Maine, US
Martha Lewis	University of Bristol, UK
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Alessandro Otramari	Bosch Research and Technology Center, US
Mihai Pomarlan	University of Bremen, Germany
Daniele Porello	University of Genoa, Italy
He Tan	Jönköping University, Sweden

The core goal of ‘CAOS: Cognition And Ontologies’ is to create synergies between cognitive sciences and research on formal ontologies. With this in mind, the primary focus of the workshop series lies in the formal modelling and representation of important cognitive phenomena and concepts, encompassing notions from research on language, reasoning, and behaviour. The event attracts an interdisciplinary audience from diverse fields, such as philosophy, linguistics, psychology, cognitive science, computer science, and other related disciplines.

The ultimate objective of CAOS is twofold. First, to encourage innovative research exploring the convergence of the cognitive sciences with formal ontologies. Second, to provide a platform for discussing unconventional scientific topics in a welcoming environment. By fostering international collaborations and promoting free-wheeling conversations, CAOS aims to significantly contribute to the advancement of cutting-edge research.

We are delighted to announce that the seventh edition of CAOS received papers covering a wide range of topics, contributed by both experienced researchers and students from different domains. In this edition, we accepted seven papers for publication in this volume. Related to the domain of knowledge representation and graph data structures, Michael DeBellis proposed modelling of the mind

as a representation of Cognitive modules in OWL (Web Ontology Language) with a functional perspective. By extending an approach used in the context of relational databases, Jens Koetters, Peter Eklund and Stefan Schmidt apply relational scaling to RDFS ontologies, advancing methodologies developed in the framework of Formal Concept Analysis. Fumiaki Toyoshima and Adrien Barton moved the first steps towards a foundation for a realist ontology representing mental phenomena, leveraging Williams's three-layered naturalistic metaphysics of representation. Hermann Bense proposed Cascaded Role Sets (CRS) as a new method to enable the representation of complex ontological structures and a novel strategy for defining Ontology Design Patterns. More linguistic-centred research is proposed by Laura Spillner, Robert Porzel, Robin Nolte and Rainer Malaka, who presented a work representing word embedding vectors as 2D images to individuate the mereotopology of semantic information. Jamie Macbeth, Mackie Zhou and Zoie Zhao investigated the human sensorimotor perception, analysing the decomposition of relationships in spatial orientation and by proposing novel conceptual primitives. Finally, Gabriele Sacco, Loris Bozzato and Oliver Kutz investigated exceptionality, gradability, and content sensitivity by studying the role of generics, and the formal desiderata to address them, in defeasible reasoning and Description Logic.

WGO

Workshop on Geospatial Ontologies 2023 Where next? The present and future of geospatial ontologies

Programme Chairs

Boyan Brodaric	Geological Survey of Canada
Michael Gruninger	University of Toronto
Torsten Hahmann	University of Maine

Panel

Torsten Hahmann	University of Maine
Werner Kuhn	University of California Santa Barbara
Antony Galton	University of Exeter
Brandon Bennett	University of Leeds

Presenters

Tara Azin, Peter Pulsifer	Carleton University
Kingsley Wiafe-Kwakye, Torsten Hahmann, Kate Beard	University of Maine
Xiuzhan Guo, Wei Huang, Min Luo, Priya Rangarajan	Royal Bank of Canada
Yixin Sun, Michael Gruninger	University of Toronto
Werner Kuhn	University of California Santa Barbara

This workshop was motivated by the tremendous growth in recent years of geospatial information, primarily published online as GIS data, geospatial linked data, or other semantically enriched data. The availability and volume of such data suggested opportunities to re-evaluate the current ecosystem of geospatial types and relations in ontologies, vocabularies and data schemas. These range from specialized geospatial data standards, such as OGC's Simple Features or Geosparql, to domain-specific ontologies or spatially-heavy knowledge graphs, such as those for the geosciences, transportation, planning, environmental sciences, architecture, manufactured products, to the spatial components of top-level ontologies.

Through presentations and a panel discussion, this workshop explored the current state of geospatial ontologies and knowledge graphs, as well as potential future directions. In particular, discussion during presentations and the panel session endeavoured to identify gaps and priorities for the next generation of geospatial ontologies. In addition, the needs of current and potential users, applications, and standards were considered, as well as current big trends such as geographically-aware Artificial Intelligence. A general conclusion saw the need for greater integration between ontology-driven and machine-learning-driven applications.

IFOW

The Integrated Food Ontology Workshop

Programme Committee

Damion Dooley	Simon Fraser University
Matthew Lange	IC-FOODS
Hande Küçük McGinty	Kansas State University
Anoosha Sehar	Simon Fraser University
Rhiannon Cameron	Simon Fraser University

Motivated by FAIR data sharing mandates, academic, agricultural and public health agencies are adopting ontology in their research and data management and reporting infrastructure, often by way of emerging data sharing standards such as the Genomic Standards Consortium MIxS collection. It is one thing to have basic standardized term coverage of various food related domains – from organism anatomy and taxonomy, to food products, food safety properties, agricultural treatments, and food processing methods. The next generation of data harmonization occurs at a higher level of modeling – the standardized data structures for modelling plant and animal trait genomics, agricultural practices, food processing, nutritional analysis, contaminant exposure and diet, health and disease related research. What vocabulary, tool ecosystem and data models are needed to accomplish this modelling? This workshop seeks to define the coverage of the different ecological, agricultural, nutritional, dietary, public health, one health surveillance, food security, and trade domains that food-related ontologies are modelling, and the use of data translation tools for bringing legacy data into the ontology fold.

The fourth IFOW workshop introduced a number of projects focusing on food and ontology from both analytic and infrastructure perspectives, and with a mixture of specific OWL ontology modelling, often involving FoodOn, or more traditional tabular database design with an aim to inject ontologies to facilitate data harmonization. Projects focusing on food analytics: the Periodic Table Of Food’s mass spectrometry of nutritional components; a detailed recipe process model; food processing hazard risk assessment; and the TransformOn ontology food process modelling in a circular economy. Two knowledge graph infrastructure related tool presentations were about multilingual food vocabulary in Wikipedia, as well as text-mining for food production and processing company information.

OSS

International Workshop on Ontologies for Services and Society

Programme Chairs

Bart Gajerowicz	Centre for Social Services Engineering, University of Toronto, Canada
Daniela Rosu	Centre for Social Services Engineering, University of Toronto, Canada
Janna Hastings	University of Zurich, University of St. Gallen

Programme Committee

Adrien Barton	Département de médecine of the Université de Sherbrooke
Andrew Fisher	Simon Fraser University
Maricela Claudia Bravo	Departamento de Sistemas, División de Ciencias Básicas e Ingeniería
Regina Motz	Universidad de la República
Roberta Ferrario	Institute for Cognitive Sciences and Technologies of the CNR
Vijay Mago	Lakehead University
Paulina Schenk	University College London

The OSS workshop fosters communication and strengthens interdisciplinary work at the intersection of semantic technologies, society, and services. It invites researchers from the Knowledge Representation, Semantic Web, and Machine Learning communities to submit theoretical contributions, novel algorithms, artifacts, and tools related to the interaction of society and service provisioning. We welcome reports from sociologists and service practitioners across various society-focused domains (e.g. social workers, therapists, physicians, probation officers, urban planners, etc.) on their experiences using semantic-enabled technologies, best practices, and insights.

The second OSS workshop explored the topic of domain ontologies, with several researchers presenting their works. Daniela Rosu focused on the inconsistent and incompatible definitions in social services, proposing an ontology that simplifies the representation of goals, needs, and outcomes. John Beverly shared updates on the Occupation Ontology (OccO), explaining their strategy for integrating codes from various sources and encouraging further community participation. Michael DeBellis introduced the DaanMatch project, designed to assist NGOs in meeting administrative requirements through advanced technology and using ontology and knowledge graph technology to model various related elements. In the application ontologies section, Giampaolo Bella et al proposed an ontological approach for cybersecurity compliance checks against textual documents, such as the European GDPR Regulation and the NIS Directive. Samer Sharani showcased an ontology of refugees' home return, with the aim of equipping policymakers with knowledge tools to improve their programs, plans, and evaluations.

Following presentations, participants engaged in a lively discussion about the many open questions about the development and application of ontologies in the

realm of social services, governmental services, and their usage within society. Despite their wide acceptance and deployment, ontologies face unique challenges that arise from their inherent complexity, the dynamic nature of service industries, and societal changes. Also, while service-related ontologies hold significant potential to improve data management, decision-making, and service delivery, their adoption by organizations and service providers faces numerous technical and cultural difficulties.

Specific challenges explored included ontology engineering and design patterns; choice of upper, domain, and application ontologies; ontological representation of services and communities (citizens, populations, individuals, etc.); and the complex nature of social service phenomena. Additional topics of discussion for implementing and working with ontologies included semantic interoperability, standardization, ontology integration, and the scalability of ontology-based systems. At the end of the discussion, we identified possible solutions and best practices for ontology implementation in services that benefit society, emphasizing the need for multi-disciplinary collaboration and a focus on sustainability.

KM4LAW

2nd International Workshop on Knowledge Management and Process Mining for Law

Programme Chairs

Davide Audrito	Legal Studies Department, University of Bologna, Italy
Luigi Di Caro	Computer Science Department, University of Turin, Italy
Francesca Grasso	Computer Science Department, University of Turin, Italy
Roberto Nai	Computer Science Department, University of Turin, Italy
Emilio Sulis	Computer Science Department, University of Turin, Italy

Programme Committee

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Chiara Di Francescomarino	University of Trento, Italy
Beatriz Esteves	Universidad Politécnica de Madrid, Spain
Marcelo Fantinato	University of São Paulo, Brazil
Daniele Licari	Sant'Anna School of Advanced Studies, Italy
Rohan Nanda	University of Maastricht, Netherlands
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Italo Jose Da Silva Oliveira	Free University, Bozen-Bolzano
Monica Palmirani	University of Bologna, Italy
Matteo Palmonari	Università degli Studi di Milano Bicocca
Harshvardhan J. Pandit	Trinity College, Dublin
Sergio Picascia	University of Milan, Italy
Davide Riva	University of Milan, Italy
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Víctor Rodríguez-Doncel	Universidad Politécnica de Madrid, Spain
Elena Romanenko	University of Bozen
Massimiliano Ronzani	FBK, Trento, Italy
Salvatore Sapienza	University of Bologna, Italy
Galileo Sartor	University of Bologna, Italy
Giovanni Siragusa	University of Turin, Italy
Andrea Tagarelli	University of Calabria, Italy

Artificial Intelligence (AI), Knowledge Modeling (KM), Information Extraction (IE) and Process Mining (PM) methods are becoming increasingly relevant to numerous sub-domains of legal informatics. These areas include ontologies, argumentation, natural language processing, legal event log analysis, all which can be paired with a multilingual approach. The Knowledge Management and Process Mining for Law (KM4Law) workshop serves as a forum to discuss these and other related topics.

The swift advancement of AI in recent years has brought us closer to solving long-standing challenges in AI & Law. This progress makes it all the more im-

portant to identify the limits of automated systems, especially when faced with the remaining unsolved intentional and unintentional ambiguities and conflicts that demand legal interpretation. This workshop aims to shed light on these issues, exploring the yet unfaced opportunities and challenges that AI presents for knowledge representation in the legal domain.

The goals of our workshop range widely, covering the classification of legal sources, legal design, and legal ontologies. Also included are legal decisions similarity and clustering, prediction and support during judicial decision making, and legal interpretation support. Further topics encompass indentifying the evolution of legal concepts and definitions over time, information extraction and classification, process mining for legal compliance, and the detection of linguistic phenomena and patterns in legal sources. We also focus on multilingual alignments of concepts, both domestic and international, and the identification of legal references and network analysis.

In particular, the second edition of the international workshop KM4LAW featured a keynote about hybrid AI for legal domain by Monica Palmirani. Six papers were presented at the workshop, covering diverse topics such as knowledge-based service architecture for legal document building by Sergio Picascia et al.; augmented reading and similar case matching by Rachele Mignone et at; the application of parameter-efficient fine-tuning on legal AI by Kuo-Chun Chien et al.; a case study integrating legal design through Business Process Model and Notation by Davide Audrito and Andrea Filippo Ferraris; an automated method for the ontological representation of security directives by Gianpietro Castiglione, Giampaolo Bella, and Daniele Francesco Santamaria; and the adoption of online context-driven neural networks for hybrid classification of audit court decisions by Monica Palmirani et al.. The success of the event and the diversity of topics discussed highlight the workshop's relevance to current research in the field.

Modular Knowledge 2023

2nd Modular Knowledge Workshop

Programme Chairs

Loris Bozzato	Fondazione Bruno Kessler, Italy
Torsten Hahmann	University of Maine, USA
Cogan Shimizu	Wright State University, USA
Antoine Zimmermann	École des Mines de Saint-Étienne, France

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Mara Abel	Universidade Federal do Rio Grande do Sul, Brazil
Grigoris Antoniou	University of Huddersfield, UK
Stefano Borgo	Italian National Research Council, Italy
Valentina Anita Carriero	University of Bologna, Italy
Thomas Eiter	Vienna University of Technology, Austria
Catherine Faron	Université Côte d'Azur, France
Maria M. Hedblom	Jönköping University, Sweden
Martin Homola	Comenius University in Bratislava, Slovakia
Francisco Martin-Recuerda	SINTEF, Norway
Till Mossakowski	University of Magdeburg, Germany
Raghava Mutharaju	IIT-Delhi, India
Vinh Nguyen	National Library of Medicine, NIH, USA
Romana Pernisch	Vrije Universiteit Amsterdam, The Netherlands
Rafael Peñaloza	University of Milano-Bicocca, Italy
Denis Ponomaryov	Novosibirsk State University, Russia
María Poveda-Villalón	Universidad Politécnica de Madrid, Spain
Guendalina Righetti	Free University of Bolzano, Italy
Patrick Rodler	Alpen-Adria Universität Klagenfurt, Austria
Uli Sattler	The University of Manchester, UK
Vojtěch Svátek	University of Economics, Prague, Czech Republic
Kerry Taylor	Australian National University and University of Surrey, Australia
Cassia Trojahn	UT2J & IRIT, France
Ivan Varzinczak	Univ. Artois and CNRS, France
George Vouros	University of Piraeus, Greece
Lu Zhou	TigerGraph Inc., USA
Valeria de Paiva	Samsung Research America and University of Birmingham, UK

The Modular Knowledge workshop offers an interdisciplinary venue for discussing and developing solutions for modularity of knowledge: the dramatic increase in the amount of open and linked data and the increasing semantification of such data make clear that knowledge is not monolithic, static or uniform, and that there is a need of methods and tools for dealing with heterogeneous and distributed knowledge as a constellation of modules.

The Modular Knowledge workshop combines the efforts of previous events (like WoMO, ARCOE-Logic and WOMoCoE workshops) into an interdisciplinary venue for discussing and developing solutions for modularity of knowledge.

The workshop aims to cover and establish connections between various approaches (ranging from rich semantic representations, like Knowledge Graphs and formal ontology, to simpler schemas, like RDF and database schemas) for representing knowledge, its context, its evolution, and for making it accessible to automatic reasoning and knowledge management tasks. The workshop spans approaches that make use of logic-based, sub-symbolic, or numerical representations.

The second edition of the Modular Knowledge workshop, which took place on 20th July 2023, combined paper presentations with sessions for extensive discussions between the participants. Out of 4 submissions, 3 papers were accepted for presentation, based on the evaluation of at least 3 reviewers per paper. The papers discuss methodologies for the development of modular ontologies, methods for domain modular knowledge graphs, and applications in representation of natural language.

FOUST VII

7th Workshop on Foundational Ontology

Programme Chairs

Riccardo Baratella	Free University of Bozen-Bolzano, Italy
Stefano Borgo	Laboratory for Applied Ontology, ISTC-CNR, Italy
Oliver Kutz	Free University of Bozen-Bolzano, Italy
Fumiaki Toyoshima	Institut de Recherche en Informatique de Toulouse, CNRS, France

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Adrien Barton	Institut de Recherche en Informatique de Toulouse, CNRS, France
John Bateman	University of Bremen, Germany
Luca Biccheri	Laboratory for Applied Ontology, ISTC-CNR, Italy
Boyan Brodaric	Geological Survey of Canada, Canada
Claudio Calosi	University of Geneva, Switzerland
Massimiliano Carrara	University of Padova, Italy
Roberta Ferrario	Laboratory for Applied Ontology, ISTC-CNR, Italy
Claudenir M. Fonseca	University of Twente, The Netherlands
Mattia Fumagalli	Free University of Bozen-Bolzano, Italy
Pawel Garbacz	John Paul II Catholic University of Lublin, Poland
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Pierre Grenon	The National Center for Ontological Research, USA
Michael Grüninger	University of Toronto, Canada
Nicola Guarino	Laboratory for Applied Ontology, ISTC-CNR, Italy
Giancarlo Guizzardi	University of Twente, The Netherlands
Heinrich Herre	University of Leipzig, Germany
Ludger Jansen	PTH Brixen, Italy
Gilles Kassel	University of Picardie, France
Kathrin Koslicki	Université de Neuchâtel, Switzerland
Frank Loebe	University of Leipzig, Germany
Jim Logan	No Magic, Inc, USA
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Olivier Massin	Université de Neuchâtel, Switzerland
Riichiro Mizoguchi	Japan Advanced Institute of Science and Technology, Japan
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Fabian Neuhaus	Otto-von-Guericke University Magdeburg, Germany
Ítalo José Da Silva Oliveira	Free University of Bozen-Bolzano, Italy
J. Neil Otte	Johns Hopkins University, USA
Daniele Porello	University of Genova, Italy
Guendalina Righetti	Free University of Bozen-Bolzano, Italy
Elena Romanenko	Free University of Bozen-Bolzano, Italy
Tiago Princes Sales	University of Twente, The Netherlands
Emilio M. Sanfilippo	Laboratory for Applied Ontology, ISTC-CNR, Italy
Barry Smith	University at Buffalo, USA
Markus Stumptner	University of South Australia, Australia
Giuliano Torrengo	University of Milan, Italy
Nicolas Troquard	Free University of Bozen-Bolzano, Italy
Laure Vieu	Institut de Recherche en Informatique de Toulouse, CNRS, France

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Oliver Kutz	Free University of Bozen-Bolzano, Italy
Frank Loebe	University of Leipzig, Germany
Fabian Neuhaus	Otto-von-Guericke University Magdeburg, Germany

Foundational ontology is about categories of reality or thought which are common to all or almost all subject-matters. Commonly considered examples of such categories include ‘object’, ‘quality’, ‘function’, ‘role’, ‘process’, ‘event’, ‘time’, and ‘place’. There are several foundational ontologies that provide a systematic formal representation of these categories, their relationships, and interdependencies. Amongst existing foundational ontologies, there is both a substantial measure of agreement and some dramatic disagreements. There is currently no uniform consensus concerning how a foundational ontology should be organised, how far its ‘reach’ should be (e.g., is the distinction between physical and non-physical entities sufficiently fundamental to be included here?), and even what role it should play in relation to more specialised domain ontologies.

The main use of foundational ontologies is as a starting point for the development of domain ontologies and application ontologies. A foundational ontology provides an ontology engineer with a conceptual framework that enables her to analyse a given domain, identify the entities in the domain as specialisations of the generic categories in the foundational ontology, and often reuse relationships (e.g., part-hood) from the foundational ontology. The utilisation of foundational ontologies for the development of domain and application ontologies has two main benefits. Firstly, the ontology engineer can reuse an existing set of well-studied ontological distinctions and design principles instead of having to develop an ad-hoc solution. Secondly, if two domain ontologies are based on the same foundational ontology, it is easier to integrate them.

FOUST is an ontology workshop series that offers researchers in foundational ontology an opportunity to present their results. This includes work on specific areas of foundational ontology as well as work on a particular foundational ontology. The seventh edition of FOUST (FOUST VII) accepted eight papers for presentation and they are included in the present volume.

FOIS 2023 Satellite Events

FOIS 2023 Early Career Symposium

Programme Chairs

Guendalina Righetti	Free University of Bozen-Bolzano, Italy
Antoine Zimmermann	École des Mines de Saint-Étienne, France

ECS mentors

Mara Abel	Federal University of Rio Grande do Sul, Brazil
Nathalie Aussenac-Gilles	IRIT CNRS, France
Brandon Bennett	University of Leeds, UK
Michael Gruninger	University of Toronto, Canada
Nicola Guarino	Laboratory for Applied Ontology, ISTC-CNR, Italy
Giancarlo Guizzardi	University of Twente, The Netherlands
Torsten Hahmann	University of Maine, USA
Werner Kuhn	University of California Santa Barbara, USA
Oliver Kutz	Free University of Bozen-Bolzano, Italy

The Early Career Symposium (ECS) is an integral part of the FOIS conference, created with the specific aim of providing students and early career researchers with a stage to present their work and receive feedback and insights from experienced researchers.

In the spirit of cultivating young talent and fostering knowledge exchange, this year's participants in the ECS had the chance to showcase their research through both short oral presentations in front of the FOIS audience and engaging poster presentations.

On the first day of the conference, each participant could engage in an extended conversation with a senior mentor in their respective fields during a dedicated mentoring lunch. This interaction serves as a bridge between generations of researchers, facilitating guidance, wisdom, and knowledge transfer from experienced hands to those just starting their academic journey, and, in turn, contributes to the collective advancement of knowledge by allowing young researchers to provide innovative ideas.

The ECS is not just about formal presentations and structured mentoring but also offers a venue to build informal networks and relationships. To facilitate this, we hosted an ECS dinner, creating a relaxed and friendly atmosphere where early career researchers could interact with each other more informally, exchange ideas, and build lasting connections.

As it is connected to the FOIS conference, the ECS welcomes research addressed in an interdisciplinary aptitude towards formal and philosophical ontology, cognitive science, knowledge representation, linguistics and more.

This year, seven PhD students participated in the ECS, each offering valuable contributions to the symposium through their diverse research endeavours. Their topics spanned a broad spectrum, covering: knowledge extraction from scientific

publications, with an application to knowledge in cellulose materials; the use of ontologies for robots, both for spatial and uncertain reasoning; conceptual foundation of sustainability for AI ethics; development of ontology-based GIS for supporting forest resource management; the use of generics to model exceptions in Description Logic; and the role of ontologies in automated reasoning to answer geospatial queries.

We express our deepest gratitude to all participants, mentors, and attendees for making ECS an essential component of the FOIS conference.

FOIS 2023 Demonstrations

Programme Chairs

Sergio de Cesare	University of Westminster, United Kingdom
Tiago Prince Sales	University of Twente, Netherlands

Programme Committee

C. Maria Keet	University of Cape Town, South Africa
Claudenir M. Fonseca	University of Twente, Netherlands
Daniele Porello	University of Genova, Italy
Davide Lanti	Free University of Bozen-Bolzano, Italy
Jesualdo Fernández-Breis	University of Murcia, Spain
Núria Queralt Rosinach	Leiden University Medical Center, Netherlands
Peter Winstanley	Semantechs Consulting, UK
Walter Terkaj	Italian National Research Council, Italy

The demonstration track complements FOIS 2023 main tracks by offering an interactive platform for authors to present and discuss their work. It invites demonstrations of methods and tools developed using ontologies, as well as those to create, maintain, integrate, publish, evaluate, and implement ontologies. It also welcomes demonstrations of novel ontology (anti)patterns and of challenges arising in the ontology engineering life cycle.

This year, five papers were accepted in the demonstration track. One was presented during the on-site part of FOIS and the remainder in the online part. The papers discussed tools for education, reasoning systems, and application of knowledge graphs.

FOIS 2023 Ontology Showcase

Programme Chairs

Sergio de Cesare
Tiago Prince Sales

University of Westminster, United Kingdom
University of Twente, Netherlands

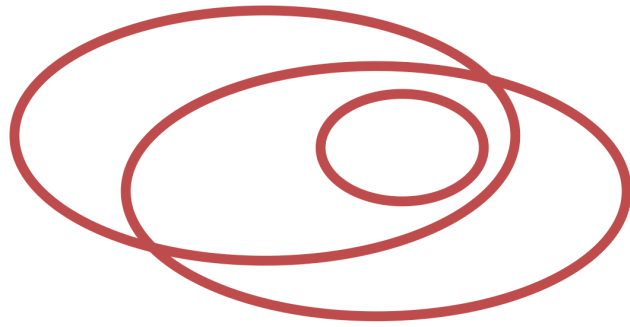
Programme Committee

Bart Gajderowicz
Damion Dooley
Emilio Sanfilippo
Mara Abel
Mattia Fumagalli
Oscar Corcho
Pawel Garbacz
Riccardo Baratella
Stefano Borgo

University of Toronto, Canada
Simon Fraser University, Canada
Italian National Research Council, Italy
Federal University of Rio Grande do Sul, Brazil
Free University of Bozen-Bolzano, Italy
Polytechnic University of Madrid, Spain
John Paul II Catholic University of Lublin, Poland
Free University of Bozen-Bolzano, Italy
Italian National Research Council, Italy

As the Applied Ontology community, we have reached the point where an impressive variety of ontologies have been developed across a wide range of domains. For the most part, however, there has been a lack of coordination among these efforts and even a lack of awareness about the work that is being done by groups within the community. The Ontology Showcase at FOIS 2023 facilitates the sharing and reuse of ontologies, with the goal of achieving the vision of seamless semantic interoperability of curated ontologies within their applications.

This year, eight ontologies were accepted for presentation. Three were presented during the on-site part of FOIS. The other five were presented in the online part. The ontologies described a wide range of domains, including record management, privacy, cognitive theories, and expertise.



I A O A