



XIII Seminar on Ontology Research in Brazil

Vitória - ES, Brazil, November 23-26, 2020

Proceedings

Organization



Partner institutions



Copyright 2020 for the individual papers by the papers' authors. Copyright 2020 for the volume as a collection by its editors. This volume and its papers are published under the Creative Commons License Attribution 4.0 International (CC BY 4.0).

Program Chairs' addresses:

Daniela Lucas da Silva Lemos - danielalucas@hotmail.com

Federal University of Espírito Santo (UFES)

Library Science Department

CEP 29075-910, Vitória/ES, Brazil

Tiago Prince Sales - tiago.princesales@unibz.it

Free University of Bozen-Bolzano

Conceptual and Cognitive Modelling Research Group (CORE)

CEP 39100, Bolzano BZ, Italy

WTDO Chairs' addresses:

Maria Luiza Machado Campos - mLuiza@nce.ufrj.br

Federal University of Rio de Janeiro (UFRJ)

Computer Science Department

CEP 21945-970, Rio de Janeiro/RJ, Brazil

Sandro Rama Fiorini - srfiorini@ieee.org

International Business Machines Corporation (IBM)

Research Scientist at IBM Research

CEP 22290-903, Rio de Janeiro/RJ, Brazil

Preface

Ontology is a cross-disciplinary field concerning the study of concepts and theories that support the building of shared conceptualizations of specific domains. In recent years, there has been a growing interest in the application of ontologies to solve modeling and classification problems in diverse areas such as Computer Science, Information Science, Philosophy, Artificial Intelligence, Linguistics, Knowledge Management, and many others.

The Seminar on Ontology Research in Brazil, ONTOBRAS, provided an opportunity and a scientific environment in which researchers and practitioners from Information Sciences and Computer Science discussed the theories, methodologies, languages, tools, and experiences related to ontology development and application.

Researchers and practitioners were invited to submit theoretical, technical and practical research contributions that directly or indirectly address the issues above. The call for papers was open for submissions in Portuguese, English or Spanish into two tracks: a main track and a Doctoral and Masters Consortium on Ontologies (WTDO).

All submissions were reviewed by our program committee, which is composed of national and international experts in the field. Out of 36 submissions to the main track, 14 papers (38,9%) were accepted as full papers for oral presentation (well-evaluated papers describing research with clear demonstrated results) and 6 as short papers for poster presentation (well-evaluated papers describing ongoing work). In WTDO, 12 submissions (4 at DSc level, 8 at MSc level) were selected for oral presentation at the workshop.

We thank the organizing committee for their commitment to the success of the event, the authors for their submissions and the program committee for their hard work.

November 2020

Daniela Lucas da Silva Lemos

Tiago Prince Sales

Maria Luiza Machado Campos

Sandro Rama Fiorini

ONTOBRAS

General Chairs

Monalessa Perini Barcellos	Federal University of Espírito Santo, Brazil
Vítor E. Silva Souza	Federal University of Espírito Santo, Brazil

Program Committee Chairs

Daniela Lucas da Silva Lemos	Federal University of Espírito Santo, Brazil
Tiago Prince Sales	Free University of Bozen-Bolzano, Italy

WTDO (Theses and Dissertations Workshop) Chairs

Maria Luiza Machado Campos	Federal University of Rio de Janeiro, Brazil
Sandro Rama Fiorini	IBM Research Center, Brazil

Publicity Chair

Renata S. S. Guizzardi	Federal University of Espírito Santo, Brazil
------------------------	----------------------------------------------

Editorial Committee

Alexandre Adler Cunha Freitas	Federal University of Espírito Santo, Brazil
-------------------------------	----------------------------------------------

Website and Social Media

Félix Luiz Zanetti	Federal Institute of Espírito Santo, Brazil
--------------------	---------------------------------------------

Program Committee

Alessander Botti Benevides	Federal University of Espírito Santo, Brazil
Alexandre Rademaker	IBM Research and Getúlio Vargas Foundation School of Applied Mathematics, Brazil
Ana Ozaki	University of Bergen, Norway
Claudenir Fonseca	Free University of Bozen-Bolzano, Italy
Clever Farias	University of São Paulo, Brazil
Cláudio Gottschalg-Duque	University of Brasília, Brazil
Cristine Griffo	KRDB Research Centre for Knowledge and Data, Free University of Bozen-Bolzano, Italy
Fabricio Mendonca	Federal University of Juiz de Fora, Brazil
Fernanda Baião	Pontifical Catholic University of Rio de Janeiro, Brazil
Fernanda Farinelli	Federal University of Minas Gerais, Brazil
Fernando Cruzjúli	University of Brasília, Brazil
Fernando Silva Parreiras	FUMEC University, Brazil
Flavio S. Correa Da Silva	University of São Paulo, Brazil
Fred Freitas	Federal University of Pernambuco, Brazil
Gabriela Henning	Universidad Nacional del Litoral, Argentina
Giancarlo Guizzardi	Free University of Bozen-Bolzano, Italy
Joel Carbonera	Federal University of Rio Grande do Sul, Brazil
Jose M. Parente de Oliveira	Aeronautics Institute of Technology, Brazil

Kate Revoredo	Federal University of the State of Rio de Janeiro, Brazil
Lais Salvador	Federal University of Bahia, Brazil
Luan Garcia	Federal University of Rio Grande do Sul, Brazil
Luiz Olavo Bonino da Silva Santos	University of Twente, The Netherlands
Ma. Laura Caliusco	Facultad Regional Santa Fe, Argentina
Mara Abel	Federal University of Rio Grande do Sul, Brazil
Marcello Peixoto Bax	Federal University of Minas Gerais, Brazil
Maria Das Graças da Silva Teixeira	Federal University of Espírito Santo, Brazil
Maria Luiza Campos	Federal University of Rio de Janeiro, Brazil
Mauricio Almeida	Federal University of Minas Gerais, Brazil
Nicola Guarino	Institute of Cognitive Sciences and Technologies, Italy
Rafael Peñaloza	University of Milano-Bicocca, Italy
Regina Braga	Federal University of Juiz de Fora, Brazil
Renata Baracho	Federal University of Minas Gerais, Brazil
Renata S. S. Guizzardi	Federal University of Espírito Santo, Brazil
Renata Wassermann	University of São Paulo, Brazil
Renato Rocha Souza	Getúlio Vargas Foundation, Brazil
Sandro Rama Fiorini	IBM Research Center, Brazil
Silvio Gonnet	National University of Technology, Argentina
Veruska Zamborlini	University of Amsterdam
Vânia Vidal	Federal University of Ceará, Brazil
Alessander Botti Benevides	Federal University of Espírito Santo, Brazil

WTDO (Theses and Dissertations Workshop) Program Committee

Fred Freitas	Federal University of Pernambuco, Brazil
Giancarlo Guizzardi	Free University of Bozen-Bolzano, Italy
João Paulo A. Almeida	Federal University of Espírito Santo, Brazil
Joel Luís Carbonera	Federal University of Rio Grande do Sul, Brazil
José M. Parente de Oliveira	Aeronautics Institute of Technology, Brazil
Júlio Cesar Dos Reis	University of Campinas, Brazil
Luan Garcia	Federal University of Rio Grande do Sul, Brazil
Marcello Peixoto Bax	Federal University of Minas Gerais, Brazil
Maria Luiza Machado Campos	Federal University of Rio de Janeiro, Brazil
Mauricio Almeida	Federal University of Minas Gerais, Brazil
Renata Baracho	Federal University of Minas Gerais, Brazil
Renata Wassermann	University of São Paulo, Brazil
Rita Berardi	Federal University of Technology, Brazil
Sandro Rama Fiorini	IBM Research Center, Brazil

Contents

I	Full Papers	09
	A Core Ontology on Decision Making Renata Guizzardi, Bruno Guimarães Carneiro, Daniele Porello, Giancarlo Guizzardi	21
	A Prototypical Semantic Annotator for A Tribuna Newspaper Elias de Oliveira, Wesley Silva, Juliana C. Pirovani, Jean-Rémi Bourgue	34
	A spatial relation ontology for deep-water depositional system description in Geology Fernando Cicconeto, Lucas Valadares Vieira, Mara Abel, Renata dos Santos Alvarenga, Joel Luis Carbonera	47
	An Ontological Analysis from Algorithm to Computer Capability José Parente de Oliveira	60
	Integração Semântica das Bases de Dados do Sistema Único de Saúde: Um Estudo de Caso com o Município de São Paulo (Semantic data integration for the Brazilian Public Health System: a case study with São Paulo) Debora Pereira, Alexandre Pessoa, Lais Salvador, Renata Wassermann	74
	LawV: Towards an Ontology-based Visual Modeling Language in the Legal Domain Cristine Griffó, Maria Das Graças Da Silva Teixeira, João Paulo Andrade Almeida, Frederik Gailly, Giancarlo Guizzardi	88
	ODF: Uma Ontologia de Domínio do Direito de Família Brasileiro com Foco na Prestação Alimentícia (ODF: A Domain Ontology of Brazilian Family Law Focusing on Person Support Payment) Milena Ramalho Bolzan, Cristine Griffó, Maria Das Graças Da Silva Teixeira	103
	Onto4AllEditor: um Editor Web Gráfico de Ontologias Direcionado a Diferentes Tipos de Desenvolvedores de Ontologias (Onto4AllEditor: a Graphical Web Ontology Editor Oriented Different Types of Ontology Developers) Fabrício Mendonça, Lucas Castro, Jairo Souza, Maurício Almeida, Eduardo Felipe	119
	Ontologias para Sistemas AAL que abordem Compliance: uma revisão sistemática da literatura (Ontologies for AAL Systems that address Compliance: a systematic mapping of the literature) Timoteo Silva, Fernanda Alencar	133
	Ontological Analysis of Weathering Lucas Vieira, Fabricio Rodrigues, Mara Abel	147
	Stability Patterns in Ontology-Driven Conceptual Modeling Giancarlo Guizzardi, João Paulo Andrade Almeida	160

Towards an Ontology Engineering Framework for Integrating Visualisation, Metamodelling and Reasoning	
Emiliano Rios Gavagnin, Germán Alejandro Braun, Laura Cecchi, Pablo Fillottrani	
	175
Um Ambiente para Integração de Dados Abertos relativos à Despesa Pública (An Environment for Integrating Public Expense Open Data)	
Gustavo Britto, Fabiano Ruy, Carlos Azevedo	
	189
What Geologists Talk About: Towards a Frequency-Based Ontological Analysis of Petroleum Domain Terms	
Luan Fonseca Garcia, Fabrício H. Rodrigues, Alcides Lopes, Renata Dos Santos Alvarenga, Michel Perrin, Mara Abel	
	203
 II Short Papers	 204
Arquitetura de Integração e Ontologia de Suporte para Recomendação de Objetos Educacionais em Ambientes Virtuais de Aprendizagem (Integration Architecture and Support Ontology for Recommendation of Educational Objects in Virtual Learning Environments)	
Jorão Gomes Jr., Jairo Souza, Fabrício Mendonça, Regina Braga	
	211
Critical Communications Scenarios Description based on Ontological Analysis	
Julio Tesolin, Marcus Silva, Maria Luiza Campos, David Moura, Maria Claudia Cavalcanti	
	218
NWPOntology: A well-founded Ontology for the Numerical Weather Prediction Data Domain	
Tiago Duarte Neves, Ivanildo Barbosa, Kelli de Faria Cordeiro	
	226
Oportunidades de KIPO para Gestão em Sistemas de Informação Federados no Caso do Programa Bolsa Família (KIPO Opportunities for Management of Federated Information Systems in the Case of the "Bolsa Família" Program)	
Roberto Monteiro Dias, Nadja Piedade de Antonio, Flavio Horita, Rodrigo Pereira dos Santos	
	234
Um Modelo Conceitual Baseado em Ontologia para Doenças Infecciosas com Ênfase em Tuberculose (An Ontology-Based Conceptual Model for Infectious Diseases emphasizing Tuberculosis)	
Thayza S. Guarnier, Maria G. da Silva Teixeira, Danielli R. Costa, Carolina M. M. Sales, Silvia D. Rissino	
	242
Use of Ontology to Model the Perception of the Environment by a Humanoid Robot	
Helio Azevedo, José Pedro Ribeiro Belo, Isaque Souza, Roseli Romero	
	250

III	WTDO (Theses and Dissertations Workshop)	251
III.1	Master's dissertation	251
	A Tool for Automatic Reasoning over Decision Documentation using gUFO Bruno G. Carneiro, Renata Guizzardi	256
	Arcabouço Comparativo de Ferramentas para Integração Semântica de Dados Tabulares (Comparative Framework of Tools for Semantic Integration of Tabular Data) Marcello Peixoto Bax, Rafael Rocha	262
	Link Maintenance in the Semantic Web André Gomes Regino, Julio Cesar dos Reis	268
	Método semântico de priorização de atendimento médico baseado em regras definidas por especialistas através de SWRL (Semantic method of prioritizing medical care based on rules defined by specialists through SWRL) André Gomes Regino, Julio Cesar dos Reis	274
	O uso de anotação semântica e ontologias na busca de similaridade entre entrevistas não-estruturadas em banco de dados Rovilson de Freitas, Elaine Parros Machado de Sousa	279
	Ontological Model for Decision Support about Bariatric Surgery Glauber Muzyka Oyarzabal Nunes, Rita Cristina Galarraga Berardi	285
	Proveniência arquivística em um poço de petróleo: uso de ontologias para representação semântica de documentos (Archival Provenance in an oil well: using ontologies to semantically represent records) Marieta Marks Löw, Rafael Port da Rocha	291
	Utilização de ontologia para auxílio na avaliação de segurança cibernética da infraestrutura crítica do setor elétrico: perspectiva brasileira (Using ontology to assist in cyber security assessment of critical infrastructure in the energy sector: Brazilian perspective) Márcio R. Machado, Marcello Peixoto Bax	297
III.2	Doctoral thesis	298
	Dicionários Semânticos de Dados para Integrar Dados de Prontuários Eletrônicos de Pacientes (Semantic Data Dictionary to Integrate Data of Electronic Medical Records) Marcello Peixoto Bax, Evaldo de Oliveira da Silva	303

Integração de dados usando ontologias e regras lógicas para automação da certificação LEED de projetos da construção civil (Data integration using ontologies and logical rules for automation of LEED certification of civil construction projects) Marcello Peixoto Bax, Cristiano Geraldo Teixeira Silva	309
Ontology of Value, Risk and Cognitive Biases for an IT Portfolio Decision Making Eduardo da Costa Ramos, Maria Luiza M. Campos, Fernanda Araújo Baião	315
Proposta de Mecanismo de Consentimento na Lei Geral de Proteção a Dados – LGPD (Consent mechanism proposal in LGPD) Marcello Peixoto Bax, João Luiz Silva Barbosa	321