Daniele Porello

Associate professor

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Education and training

2006
PhD in Philosophy
Linguistic Applications of Non-commutative Logics
University of Genova - Genova - IT

Academic experience

2021 - ONGOING
Associate Professor
University of Genova - Genona - IT

2018 - 2021
Researcher
CNR (Italian National Research Council) - Trento - IT

2016 - 2018
Assistant Professor
Free University of Bozen-Bolzano - Bozen-Bolzano - IT

2012 - 2016
Postdoc
CNR (National Research Council of Research) - Trento - IT

2008 - 2012
Researcher
Institute for Logic Language and Computation (ILLC) - Amsterdam - NL

2007 - 2008
Postdoc
INRIA - Bordeaux - FR

Language skills

English
Proficient

French
Independent

Teaching activity

My teaching activity is dedicated to teaching logic for the bachelor in philosophy and for the master in phiosophical methodology. Moreover, I taught course in Game Theory, Social Choice Theory, Computational Ontology, tutorials at international conferences, and courses for varoius PhD programs.

Selected tutorials

- *FOUNT: Towards a systematic methodology for foundational ontologies: properties, relations, and truthmaking* (with G. Guarino and G. Guizzardi). Tutorial at JOWO 2019.

https://www.danieleporello.net/foundational-ontologies/

- Ontological *Patterns and Anti-pattenrs for the modeling of complex enterprise relationships.*Tutprial at CAISE 2019 (with G. Guarino and G. Guizzardi). 31st International Conference on Advanced Information Systems Engineering. Rome, Italy. June 2019.

https://www.caise19.it/tutorials/

- Introduction *to Judgment Aggregation.* European Agent Systems Summer School (EASSS). Maastricht, The Netherlands. June 2018.

https://www.danieleporello.net/easss-ja/

- *Introduction to the logics of agency.* European Agent Systems Summer School (EASSS) (with N. Troquard). Maastricht, The Netherlands. June 2018.

https://www.danieleporello.net/easss-agency/

- Formal *Ontological Analysis and Knowledge Representation (FOAKR)* (with G. Guarino and G. Guizzardi). 17th International Conference of the Italian Association for Artificial Intelligence, Trento, November 20-23, 2018 (AI*IA).

https://www.danieleporello.net/formal-ontology-in-knowledge-representation/

Selected past courses

- Introduction *to Game Theory.* Doctoral School on Computer Science, Free University of Bozen-Bolzano. (2016, 2017, 2018, 2019, 2020).

- *Introduction to Multiagent systems.* Doctoral School on Information and Communication Technology, University of Trento. 2016

- *Computer Vision Meets Formal Ontology: advanced methods, recent applications and perspectives.* (with M. Cristani, R. Ferrario). Doctoral School on Information and Communication Technology, University of

Trento. June 2015.

- *Giudizi, preferenze, deliberazioni: modelli di scelta sociale*. PhD in Philosophy, University of Padova. November 2012.

https://www.danieleporello.net/giudizi-preferenze-deliberazione/

- *Logic Programming and Search Techniques*. BSc Artificial Intelligence, University of Amsterdam, Autumn 2011.

- *Normative Foundations and Mathematical Modelling of Egalitarian and Utilitarian Welfare*. Master of Logic, University of Amsterdam, January 2011.

https://www.danieleporello.net/egalitarian-and-utilitarian-welfare/

- *Modern Classics in Social Choice Theory*. Master of Logic (co-lecturer), University of Amsterdam, June 2009.

https://staff.science.uva.nl/u.endriss/teaching/modern-classics-2009/

Postgraduate research and teaching activity

Supervision of PhD students, residents and post-doctoral fellows

I was supervisor of master thesis and PhD for the Free University of Bozen-Bolzano, University of Trento, and University of Amsterdam.

PhD committees membership

I was member of the council of the PhD in Computer Science of the Free University of Bozen-Bolzano. I am currently member of the conucil of the PhD program FINO (Northwestern Italian Philosophy Consortium).

Postgraduate (PhD) teaching activity

I taught courses of the PhD in Computer Science of the Free University of Bozen-Bolzano, for the PhD in Computer Science of the University of Trento, and for the PhD in Philosophy of the University of Padova.

Research interests

My research interests focus on logical themes in AI, knowledge representation, applied ontology, and social choice theory.
In AI and knowledge representation, I worked on extensions of Description Logics to represent cognitive aspects of classification and reasoning, on algorithms for computational concept creativity, on modal logics of action, deontic logics, resource sensitive logics for modelling economic interactions.
In applied ontology, I contributed to foudnational ontologies as well as to domain ontologies, in particular in social ontology.
Moreover, I worked on algorithms for repairing inconsistent ontologies and

to integrate ontologies developed by heterogeneous agents.
In social choice theory, I worked on algorithmic aspects of voting procedures, models of multiagent deliberation, logics for aggregating individual attitudes, focussing on the problem of collective rationality from the plural perspective provided by non-classical logics.
You can find my publications at the following link
https://www.danieleporello.net/publications/

Selected publications

- S. Borgo, R. Ferrario, A. Gangemi, N Guarino, C. Masolo, D. Porello, E. Sanfilippo, L. Vieu. **DOLCE: A descriptive ontology for linguistic and cognitive engineering.** *Applied Ontology.* 17(1): 45-69 (2022).

- G. Guizzardi, A. Botti Benevides, C. M. Fonseca, D. Porello, J. P. A. Almeida, T. Prince Sales. **UFO: Unified Foundational Ontology**. *Applied Ontology*. 17(1): 167-210 (2022).

- G. Righetti, D. Porello, N. Troquard, O. Kutz, M.M. Hedblom, P. Galliani. **Asymmetric Hybrids: Dialogues for Computational Concept Combination**. In *Formal Ontology in Information Systems*, FOIS 2021. IOS Press. 81-96. (**BEST PAPER Award - FOIS 2021**)

- D. Porello, G. Guizzardi, T. Prince Sales, G. C. M. Amaral. **A Core Ontology for Economic Exchanges**. *Conceptual Modeling - 39th International Conference,* ER 2020, Vienna, Austria, November 3-6, 2020, Proceedings. 364-374.

- D. Porello, N. Troquard, R. Peñaloza, R. Confalonieri, P. Galliani, O. Kutz. **Two Approaches to Ontology Aggregation Based on Axiom Weakening**. In *Proceedings of the 27th International Joint Conference on Artificial Intelligence and the 23rd European Conference on Artificial Intelligence*. (IJCAI-ECAI 2018). 1942-1948.

- D. Porello. **Logics for modelling collective attitudes**. *Fundamenta Informaticae*. 158 (1-3): 239-275. 2018.

- D. Porello. **Judgment aggregation in non-classcial logics**. *Journal of Applied Non-Classical Logics*. 27 (1-2): 106-139. 2017.

- N. Troquard, R. Confalonieri, P. Galliani, R. Peñaloza, D. Porello and O. Kutz. **Repairing Ontologies via Axiom Weakening**. In *Proceedings of the Thirty-Second AAAI Conference on Artificial Intelligence, New Orleans, Louisiana, USA, February 2-7, 2018* (AAAI 2018). 1981-1988.

- D. Porello. **Single-peakedness and semantic dimensions of preferences**. *Logic Journal of IGPL, 2016*. 24(2): 570-583.

- D. Porello and N. Troquard. **Non-normal modalities in variants of Linear Logic**. *Journal of Applied Non-Classical Logics*. 25(3): 229-255. 2015.

- Daniele Porello and Ulle Endriss. **Ontology Merging as Social Choice: Judgment Aggregation under the Open World Assumption**. *Journal of Logic and Computation*. 24 (6): 1229-1249, 2014

- V. Ottonelli and D. Porello. **On the Elusive Notion of Meta-Agreement**. *Politics, Philosophy & Economics*. 12 (1): 68-92, 2013.

- U. Endriss, U. Grandi, e D. Porello. **Complexity of Judgment Aggregation**. *Journal of Artificial Intelligence Research*, 45:481-514, 2012.

- D. Porello and U. Endriss. **Modelling Combinatorial Auctions in Linear Logic**. In *Proceedings of the 12th International Conference on the Principles of Knowledge Representation and Reasoning (KR-2010)*, May 2010.

Grants

2022 - ONGOING
BRIO -- Bias Risk Opacity in AI
PRIN 2020 - IT
Participant
https://sites.unimi.it/brio/

2021 - ONGOING
ONTOCOMMONS
ESF H2020 CSA (Coordination and Support Action)
Participant
https://ontocommons.eu

2017 - 2019
SECO - Social Evaluation of Concepts
Free University of Bozen-Bolzaon - IT
Pricipal investigator
https://www.danieleporello.net/seco/

2017 - 2019
CREED - Coherence and Explanation
Free University of Bozen-Bolzano - IT
Pricipal investigator
https://www.danieleporello.net/creed/

Editorial activity

I am member of the editorial board of *Applied Ontology*
https://www.iospress.com/catalog/journals/applied-ontology
I am often PC member of conference such as AAAI, IJCAI, FOIS, KR, AAMAS
and of workshops in logic, AI, and applied ontology.
I was also reviewer for:
Applied Ontologies, Artificial Intelligence, Economics and Philosophy,

Fundamenta Informaticae, Group Decision and Negotiation, Journal of Applied Non-classical Logics, Journal of Logic, Language and Information, Journal of Logic and Computation, Journal of Philosophy, Logic Journal of the IGPL, Mind, Sistemi Integlligenti, Synthese.

Assignments abroad

Researcher at ILLC, University of Amsteram, postdoc at INRIA, Bordeaux.

Other professional activities

I contrubute to the proposal of standardisation (ISO International Standards Organisation) of DOLCE foundational ontology. https://www.iso.org/standard/78927.html