

# RICARDO FERREIRA GUIMARÃES

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## OBJECTIVE

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Dedicated and curious Computer Scientist (PhD) with expertise in Artificial Intelligence (especially Knowledge Representation). Seeking a full-time research or development opportunity to employ my skills in digital transformations.

## EXPERIENCE

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**Postdoctoral Research Fellow** (*Full-time fixed-term*) Dec 2020 – Present  
Department of Informatics, University of Bergen Bergen, Norway

- Published results on high-quality venues on Artificial Intelligence (AAAI 2023, NLDL 2023, JAIR (to appear)).
- Communicated results on international workshops.
- Planned, created material for, and delivered two courses.
- Co-supervised 2 master students and 2 PhD students.
- Co-organised a research school on Artificial Intelligence.

**Research Assistant** (*Full-time fixed-term*) Mar 2020 – Nov 2020  
Faculty of Science and Technology, Free University of Bozen-Bolzano Bozen-Bolzano, Italy

- Collaborated with international colleagues and presented research results at AAAI 2021.

**Academic Visitor** (*Full-time internship*) Apr 2018 – Jan 2019  
Information Management Group, University of Manchester Manchester, UK

- Published results of the collaboration in an international workshop on Ontology Modularity (WOMoCoE 2018).
- Funded by São Paulo Research Agency (FAPESP).

**System Administrator** (*Part-time internship*) Mar 2013 – Feb 2015  
Rede Linux, Institute of Mathematics and Statistics, University of São Paulo São Paulo, Brazil

- Maintained and developed the computer network that supports the institute's undergraduate students.

## EDUCATION

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**PhD in Computer Science** Mar 2015 – Jan 2020  
Institute of Mathematics and Statistics, University of São Paulo São Paulo, Brazil  
Thesis: Modularity in Belief Change of Description Logic Bases  
Relevant Coursework: Artificial Intelligence Lab, Reasoning About Knowledge, Machine Learning

**BSc in Computer Science** (*Honourable Mention*) Feb 2011 – Dec 2014  
Institute of Mathematics and Statistics, University of São Paulo São Paulo, Brazil  
Bachelor Project: Extensions to the AML Ontology Aligner  
Relevant Coursework: Algorithm Analysis, Database Systems, Extreme Programming Lab, Numerical Linear Algebra

## SKILLS

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**Technical:** Python, Java, C, SQL, GNU/Linux, Git, L<sup>A</sup>T<sub>E</sub>X, Knowledge Graphs, Ontologies, OWL, RDF, SPARQL, Protégé, Data Science (IBM Specialization), Extreme Programming (Agile)

**Soft:** Problem-solving, Adaptability, Time Management, Scientific Method/Research, Academic Writing

**Languages:** English (proficient), Norwegian (basic), Portuguese (native)

## SELECTED PUBLICATIONS

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- Guimarães, Ozaki, and Ribeiro “Finite Based Contraction and Expansion via Models”. In: AAAI, 2023
- Persia and Guimarães “RIDDLE: Rule Induction with Deep Learning”. In: NLDL, 2023
- Guimarães and Ozaki “Reasoning in Knowledge Graphs (Invited Paper)”. In: AIB, 2022
- Jøsang, Guimarães, and Ozaki “On the Effectiveness of Knowledge Graph Embeddings: a Rule Mining Approach”. In: KR4HI, 2022
- Guimarães et al. “Mining EL Bases with Adaptable Role Depth”. In: AAAI, 2021
- Matos et al. “Pseudo-contractions as Gentle Repairs”. In: Description Logic, Theory Combination, and All That, 2019

## CODE PROJECTS

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**OWL2DL-Change: Modularisation:** Implemented of Belief Change algorithms for OWL 2 DL ontologies using OWL API (Java). The code is instrumented with JMH for benchmarking.

**OWL2DL-CCC:** Created a tool that generates test cases for non-standard reasoning tasks (e.g. repair). It uses OWL API to handle the source ontologies and JSON to specify the types of test cases generated.

**Data Science Capstone Project:** Developed as a simple task for attaining the certification. Employs skills and tools in Data Science (SQL, Scikit-learn) to investigate the recovery rate of the stage 1 in Falcon 9 launches.

## TEACHING

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**INF207-22H:** Social Networks Theory (Bachelor/Master level)

**INF367-21H:** Selected Topics in Artificial Intelligence: Ontologies and Knowledge Graphs (Master level)

## NOTABLE ROLES

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**Co-organiser:** AIB 2022 (research school)

**Publicity co-chair:** DL 2023 (international workshop)

**PC member:** KR 2023, DL 2023, AAAI 2023, DL2022, KR2022

**Reviewer:** Information and Computation Journal, Artificial Intelligence Journal (AIJ), Neural Networks, Journal of Automated Reasoning

## INVITED TALKS

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- Belief Change with Models as Input: Adapting Expansion and Contraction. IRL 2022
- Reasoning in Knowledge Graphs. AIB 2022
- Learning and Reasoning with Knowledge Graphs and Ontologies. CEDAS Networking Event 2022

## OTHER INTERESTS

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- Natural Sciences
- Behavioural Sciences
- Technology
- Languages
- Board Games