

# Curriculum vitae

## Personal information

First name, Surname:	Ana Ozaki
Researcher unique identifier(s) (ORCID, ResearcherID, etc.):	<a href="https://dblp.uni-trier.de/pid/149/1363.html">https://dblp.uni-trier.de/pid/149/1363.html</a> <a href="https://orcid.org/0000-0002-3889-6207">https://orcid.org/0000-0002-3889-6207</a>
URL for personal website:	<a href="https://www.uib.no/en/persons/Ana.Ozaki">https://www.uib.no/en/persons/Ana.Ozaki</a> <a href="https://cair.uia.no/people/ana-ozaki/">https://cair.uia.no/people/ana-ozaki/</a>

## Education

Year	Faculty/department - University/institution - Country
2016	Ph.D. in Computer Science – University of Liverpool – United Kingdom
2012	Master in Informatics – University of Brasilia - Brazil
2011	Bachelor in Computer Science – University of Brasilia - Brazil

## Positions - current and previous

Year	Job title – Employer - Country
2020- ( <b>current</b> )	Associate Professor – University of Bergen – Norway ( <b>full-time position</b> )
2021- ( <b>current</b> )	Associate Professor – University of Agder – Norway ( <b>second affiliation 20%</b> )
2018-2020	Assistant Professor - Free University of Bozen-Bolzano - Italy
2017-2018	Postdoc – Technical University of Dresden - Germany

## Project management experience

Year	Project owner - Project - Role - Funder
2021-2024	University of Bergen– <b>Principal Investigator</b> – Learning Description Logic Ontologies – RCN (Young Talents) – <b>Acceptance Rate 8%</b>
2021-2025	Transportøkonomisk institutt– <b>Work Package Leader</b> – AI Traffic Planner – RCN (IKTPLUS)
2019-2021	Free University of Bozen-Bolzano – <b>Principal Investigator</b> - <a href="#">“Apprendimento PAC di Ontologie in Logica Descrittiva”</a>

## Supervision of students and postdocs

(Total number of students and postdocs)

Master's students	Ph.D. students	Postdoc	University/institution - Country
1	0	0	Technical University of Dresden - Germany
1	1	1	Free University of Bozen-Bolzano - Italy
6 (on going)	4 (on going)	1	University of Bergen - Norway

## Other relevant recent professional experiences

Year	Description - Role
2022	<b>Examiner</b> of PhD defense (Ghadah Alghamdi, University of Manchester, UK)
2022	<b>PC Member</b> for the Thirty-Sixth AAAI Conference on Artificial Intelligence
2022	Program Committee <b>NORA AI</b>

2022	<a href="#">PC Member</a> for the 19th International Conference on Principles of Knowledge Representation and Reasoning
2022	<b>Senior PC Member</b> for the 31st International Joint Conference on Artificial Intelligence
2022	Session Chair NLDL 2022
2021	Program Committee <b>NORA AI</b>
2021	Senior Editor NMI Journal
2021	Chair of <b>PhD Defense</b>
2021	ICT Research School <b>Evaluation Committee Member</b>
2021	<b>Mentor</b> of the PhD Student Maurice Funk at KR 2021 Doctoral Consortium
2021	<b>PC Member</b> for Thirty-Forth International Workshop on Description Logics
2021	<b>Examiner</b> of master defense (Jonas Folkvord Triki)
2021	<b>Senior PC Member</b> for the Twenty-Ninth International Joint Conference on Artificial Intelligence (IJCAI)
2021	<b>PC Member</b> for the 18-th International Conference on Principles of Knowledge Representation and Reasoning
2021	<b>PC Member</b> for the Thirty-Fifth AAAI Conference on Artificial Intelligence
2021	<b>PC Member</b> for the NORA AI Conference
2021	<b>PC Member</b> for the Fourth Northern Lights Deep Learning Workshop
2020	<a href="#">Member of the editorial board of the Journal of Machine Learning Research</a>
2020	<a href="#">Member of the editorial board of the Journal of Web Semantics</a>
2020	<b>Member</b> of the Association for the Advancement of Artificial Intelligence (AAAI)
2020	<a href="#">Program Committee-Chair</a> (PC-chair) of the 27th International Symposium on Temporal Representation and Reasoning
2020	<b>PC Member</b> for the Thirty-Fourth AAAI Conference on Artificial Intelligence
2020	<b>PC Member</b> for the Seventeenth International Conference on Principles of Knowledge Representation and Reasoning
2020	<a href="#">PC Member</a> for the Twenty-Forth European Conference on Artificial Intelligence
2020	<b>PC Member</b> for the Seventeenth European Semantic Web Conference
2020	<b>PC Member</b> for Thirty-Third International Workshop on Description Logics
2020	ICT Research School <b>Evaluation Committee Member</b>
2020	<b>Examiner</b> of PhD defense (Ricardo Guimarães, University of São Paulo, Brazil)
2019	<a href="#">Description Logic Steering Committee Member</a>
2019	<b>PC Member</b> for the Twenty-Eighth International Joint Conference on Artificial Intelligence
2019	<a href="#">Participation in the organization of the Bolzano Rules and Artificial Intelligence Summit</a>
2019	<b>PC Member</b> for the Thirty-Third AAAI Conference on Artificial Intelligence
2019	<b>PC Member</b> for Thirty-Second International Workshop on Description Logics
2018	(Collaborator) " <a href="#">Modelos y metodos basados en grafos para la computacion en gran scala</a> " (period: 01.01.2018 to 31.12.2020, budget: 95.348,00 euros).
2018	<b>PC Member</b> for the Twenty-Seventh International Joint Conference on Artificial Intelligence
2018	<b>PC Member</b> for the Thirty-Second AAAI Conference on Artificial Intelligence

### Publication statistics

~370 citations, h-index 10 (113 citations in 2020) on [google scholar](#)

Publication Record from 2014 to 2021:

- ~50 journal, conference, and workshop publications according to [DBLP](#).

### News:

[Women](#) in AI NORA News

[AAAI 2021](#) NORA News

[IJCAI 2020](#) NORA News

[IJCAI 2015](#) Liverpool Postcard

### **Awards & Recognitions:**

- Listed as one of the 30 most influential women in AI in Norway, 2021.
- Senior PC member of the International Joint Conference on Artificial Intelligence, 2021, 2022.
- Selected Momentum delegate, 2020.
  - This is a program in which each department, based on the CVs of the postdocs and associate professors, chooses one or two employees to receive training relevant for applying for grants.
- Elected [Description Logic Steering Committee Member](#), 2019.
  - The Description Logic Steering Committee is responsible for carrying out policy determined at the DL business meetings and otherwise assisting the organizers of the DL workshops.
- [Distinguished IJCAI-ECAI PC Member](#), 2018.
  - This is a recognition for the quality of reviews.
- [Distinguished Paper at the International Semantic Web Conference](#), 2017.
  - I co-authored a paper that was among the best papers at this conference.
- [E.M. Gold Award at Algorithmic Learning Theory](#), 2015.
  - This is an award in learning theory given to best student paper of the algorithmic learning theory conference.
- Trusted Reviewer of the Editorial Board of the Journal of Machine Learning Research (JMLR)
  - World class experts in machine learning are members of the JMLR editorial board.

### **Recent Talks:**

- Querying Neural Networks. KRDB, 2021.
- Querying Neural Networks. University of Tromsø, 2021.
- Learning Description Logic Ontologies: Five Approaches, CAIR, 2020.
- Learning Description Logic Ontologies. NORA AI, 2020.
  - I was invited to give a talk at the Norwegian Artificial Intelligence Research Consortium.
- Outline: Description logic ontologies have been used to represent the relevant knowledge of a domain of interest in a formal and machine-processable format. Such knowledge can be applied

to constrain the space of hypotheses in learning tasks, to integrate data coming from multiple sources, to support query answering, among others. Understanding how to describe domain knowledge in a concise and interpretable way is a fundamental challenge in artificial intelligence. I provided some examples of expressions and see which ones we can and cannot represent within classical description logic.

- On the Complexity of Learning Description Logic Ontologies. Reasoning Web Summer School, 2020.
  - I was invited to be one of the lecturers of the 16<sup>th</sup> edition of the RW summer school, held online this year. It had more than 100 participants.
- Learning Description Logic Ontologies. Laboratoire Bordelais de Recherche en Informatique, 2020.
  - I was invited to give a talk at the Laboratoire Bordelais de Recherche en Informatique. This is a research unit associated with the CNRS (UMR 5800), the University of Bordeaux and the Bordeaux INP.
- Learning Ontologies: A Question-Answer Game. What can FCA do for Artificial Intelligence?, 2019.
  - I was the keynote of the 7th edition of the FCA workshop, co-located with IJCAI.
- Outline: Ontologies have been applied to integrate and abstract information from multiple data sources; to describe knowledge in various domains, in particular, those related life sciences; among others. One can see the problem of building an ontology as a learning problem. We investigated polynomial learnability for different ontology languages within this learning model and showed non-polynomial learnability for ontologies formulated in the ontology language EL, and polynomial learnability for fragments of this language.
- Learning Ontologies: A Question-Answer Game. Logic and Learning Dagstuhl Seminar, 2019.
  - Schloss Dagstuhl is one of the world's premier meeting centers for informatics research.
- Knowledge Graphs: Facts and Figures. Seminar om forskning, innovasjon og teknologi, 2019.
  - I was invited to give a talk at Media City Bergen.
- Outline: I presented the main reasoning tasks and how to enhance reasoning using common types of meta-knowledge present in knowledge graphs; in particular, temporal validity and provenance. Then I presented important challenges for the maintenance of knowledge graphs, and approaches to deal with them.

#### **Five Selected Publications (with acceptance rate for conference publications):**

- Cosimo Persia, Ana Ozaki: On the Learnability of Possibilistic Theories . IJCAI (international peer-reviewed conference) 2020. **Acceptance rate ~12%**
  - We studied a way of representing facts and rules where there is a distinction between when they are taken as ground truth (e.g., there is life on earth) and when they are regarded as beliefs (e.g., there is life in other planets). Then, we proposed an approach to learn such kind of representation, which captures inconsistencies and partial knowledge.

- Boris Konev, Carsten Lutz, Ana Ozaki, Frank Wolter: Exact Learning of Lightweight Description Logic Ontologies. In JMLR (international peer-reviewed journal) 2018.
  - We investigated the problem of exactly learning ontologies formulated in different ontology languages. In Section 4, I provided an algorithm for learning ontologies in the ontology language DL-LiteHorn and proved that the algorithm runs in polynomial time.
  
- Ana Ozaki, Cosimo Persia, Andrea Mazzullo: [Learning Query Inseparable ELH Ontologies](#). In AAAI (international peer-reviewed conference) 2020. **Acceptance rate ~21%**
  - We investigated the problem of learning query inseparable ontologies. Query inseparability is a notion that is weaker than logical equivalence. We proved complexity results for the problem of exactly learning query inseparable ontologies formulated in the EL ontology language.
  
- Camille Bourgaux, Ana Ozaki, Rafael Peñaloza, Livia Predoiu: Provenance for the Description Logic ELHr. IJCAI (international peer-reviewed conference) 2020. **Acceptance rate ~12%**
  - We investigated a strategy for detecting which parts of a collection of facts and rules are relevant for the result of a query posed to this collection. These relevant parts are then represented as a polynomial that indicates the origin (i.e., provenance) of the query result. This can be useful to determine, for instance, the level of trust of query results.
  
- Montserrat Hermo, Ana Ozaki: Exact Learning: On the Boundary between Horn and CNF. In ACM Transactions on Computation Theory (international peer-reviewed journal) 2020.
  - We investigated the complexity of learning multivalued dependencies. Our main result was a non-trivial adaptation of Angluin's algorithm for learning Horn theories.