

Curriculum Vitae

Julian Parsert

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Education:

- 10/2019 – present **DPHil (Doctor of Philosophy) in Computer Science**
University of Oxford, United Kingdom
- 8/2018 – 12/2018 **Erasmus Exchange in Helsinki**
During my master degree I spent one semester abroad at the [University of Helsinki](#) as part of the Erasmus exchange programme.
- 9/2017 – 9/2019 **M.Sc. degree Computer Science**
University of Innsbruck, Austria
- 9/2016 – 2/2019 **B.Sc. Management and Economics**
University of Innsbruck, Austria, (**not finished**, on hold)
- 9/2014 – 7/2017 **B.Sc. Computer Science**
University of Innsbruck, Austria

Work Experience:

- 1/2019 – 7/2019 **Research Assistant, University of Innsbruck, Computational Logic**
Following my stay abroad, during which I could not be employed, I was hired again on the ERC project [SMART](#) where I continued the work on “Property Preserving Encodings of First-order Logic” [1].
- 7/2017 – 9/2018 **Research Assistant, University of Innsbruck, Computational Logic**
During this employment I was part of two research projects:
- ERC project [SMART](#): My work focused on formalization of Game and Utility Theory as well as related mathematical concepts [2, 4]. Furthermore, I worked on Deep Embeddings of mathematical formulas. In particular we focused on the embedding of First-order logic formulas. Using tensorflow as a machine learning framework we produce encodings/embeddings of formulas that preserve syntactic and semantic properties [1].
 - FWF project [Interactive Proof](#): My work on this project was about formalization of economic theories in [Isabelle/HOL](#) as part of [2, 4].
- Both projects were led by [Cezary Kaliszzyk](#).

- 7/2017 – 10/2017 **Research Assistant, University of Innsbruck, Computational Logic**
I worked on the FWF project [Certification Redux](#) led by [Christian Sternagel](#). One goal of the project was the formalization of AC-Rewriting as a part of the [IsaFoR](#) library. Homogeneous Linear Diophantine Equations (HLDEs) constitute an important part of AC-Unification. Therefore, I worked on formalizing Homogeneous Linear Diophantine Equations in [Isabelle/HOL](#). This includes a formally verified algorithm for solving HLDEs which can be extracted from Isabelle using its code generation mechanism. Further details can be found in in [\[3, 7\]](#).
- 7/2016 – 9/2016 **Research Assistant, University of Innsbruck, Department of Strategic Management, Marketing and Tourism**
I was employed on the [FairCare](#) project, and mostly worked on the Java back-end.
- 10/2015 – 2/2016 **Student Assistant, University of Innsbruck, Databases and Information Systems**
My work involved the development of a python tool for scraping, and evaluating the quality of Wikipedia articles.

Attended Workshops and Summer Schools

- April 2019
Oberurgl, AUT [Conference on Artificial Intelligence and Theorem Proving 2019 \(AITP\)](#)
I presented report on research related to [\[1\]](#)
- March 2018
Aussois, FR [Conference on Artificial Intelligence and Theorem Proving 2018 \(AITP\)](#)
- September 2017
Vienna, AUT [Viennese inter-reasoning workshop 2017 \(VINO\)](#)
I presented a report on research related to [\[4\]](#).
- July 2017
Eindhoven, NL [International School on Rewriting 2017 \(ISR\)](#)
- March 2017
Oberurgl, AUT [Conference on Artificial Intelligence and Theorem Proving 2017 \(AITP\)](#)

Miscellaneous:

- The PGT-System described in [\[5\]](#) won the “Best System” award at CICM 2018.
- I reviewed submissions to the following journals and conferences:
 - [Journal of Automated Reasoning](#)
 - [International Conference on Machine Learning 2019](#)
 - [Interactive Theorem Proving 2019](#)
 - [International Symposium on Frontiers of Combining Systems 2019](#)

Publications

Reviewed and Accepted Conference Papers

- [1] Julian Parsert, Stephanie Autherith, and Cezary Kaliszyk. (to appear) Property Preserving Embedding of First-order Logic. 6th Global Conference on Artificial Intelligence (*GCAI 2020*). 2020. doi:978-3-319-94821-8_29.
- [2] Julian Parsert and Cezary Kaliszyk. Towards Formal Foundations for Game Theory. 9th International Conference on Interactive Theorem Proving (*ITP 2018*), pp. 495–503. 2018. doi:978-3-319-94821-8_29.
- [3] Florian Meßner, Julian Parsert, Schöpf Jonas, and Christian Sternagel. A Formally Verified Solver for Homogeneous Linear Diophantine Equations. 9th International Conference on Interactive Theorem Proving (*ITP 2018*), pp. 441–458. 2018. doi:10.1007/978-3-319-94821-8_26.
- [4] Julian Parsert and Cezary Kaliszyk. Formal Microeconomic Foundations and the First Welfare Theorem. 7th ACM Conference on Certified Programs and Proofs (*CPP 2018*), ACM, pp. 91-101, 2018. doi:10.1145/3167100.
- [5] Yutaka Nagashima and Julian Parsert. System Description: Goal-Oriented Conjecturing for Isabelle/HOL. Intelligent Computer Mathematics - 11th International Conference (*CICM 2018*), volume 11006 of LNCS, pp. 225-231, 2018 doi:10.1007/978-3-319-96812-4_19.

Formalization Journals

- [6] Julian Parsert and Cezary Kaliszyk. [Microeconomics and the First Welfare Theorem](#). *Archive of Formal Proofs*, 2017.
- [7] Florian Meßner, Julian Parsert, Jonas Schöpf, and Christian Sternagel. [Homogeneous Linear Diophantine Equations](#). *Archive of Formal Proofs*, 2017.
- [8] Julian Parsert and Cezary Kaliszyk. [Von-Neumann-Morgenstern Utility Theorem](#). *Archive of Formal Proofs*, 2018.
- [9] Julian Parsert and Cezary Kaliszyk. [Linear Programming](#). *Archive of Formal Proofs*, 2019.

Theses

- [10] Formal Foundations for Game Theory. Master’s thesis at the University of Innsbruck (2019)
- [11] Formalization of the First Fundamental Theorem of Welfare Economics. Bachelor’s thesis at the University of Innsbruck (2017). (2017).