

Dear reader,

I started studying mathematics in gymnasium. I was quickly frustrated with the lack of good answers to why and how we can trust mathematical results and therefore focused my university studies on all courses I could find related to logic, which I was told held the answers. I completed my first bachelor degree, in logic, at Uppsala University. I found out that many of the questions I have are still unanswered, and I also found that I was dissatisfied with some established answers, so I wrote my master thesis on one of these problems, at Stockholm University. During my studies there I spent much time with the logic research group at the mathematics department, and I started going to workshops in the field of Homotopy Type Theory (a proposed new foundation to mathematics). Through my interest in questions on the trustworthiness of mathematics and formalisations in general, I met Andrei Rodin and started working on a PhD dissertation with him in St. Petersburg. Unfortunately, shortly into my project, my secondary (but necessary) supervisor Professor Erik Palmgren, died unexpectedly. This made it impossible for me to complete the intended project, and while we were looking for other possible directions for my thesis, the pandemic broke out and I returned to my hometown in Sweden. I worked 6 months on developing logics for a private company, and then 1.5 years as a “Wissenschaftlicher Mitarbeiterin” (25% teaching and supervising, 75% research) at the department of computer science at LMU Munich. My research during this position was focused on the limitations of induction as a tool for AI, and formal research methods in the field of machine learning.

Education

- Research assistant at LMU Munich 2021-2022
- PhD. student at St. Petersburg State University 2019-2020
Dissertation - “Judgments and proofs in the foundations of mathematics”
- Master of decision- risk- and policy analysis expected completion 2022
Master thesis - “Deciding on scientific methods - what decides?”
- Master of theoretical philosophy completed at Stockholm University October 2018
Master thesis - “The Hilbert-Gentzen thesis - naive derivations and the informal proofs debate”
- Bachelor of practical philosophy (with minor in theoretical physics) completed at Uppsala University September 2019
Bachelor thesis - “Mathiness and lying - mathiness in the context of philosophical theories of deception”
- Bachelor of theoretical philosophy (with minor in Mandarin) completed at Uppsala University January 2017
Bachelor thesis - “Do unicorns really not exist? a look at negative facts in truthmaker theory”
- Gymnasium diploma (mathematics programme) from Lundellska skolan June 2013

Employment history

- 2021-2022 Researcher at the department of computer science at LMU Munich
 - Research
 - Teaching
 - Thesis supervising
- 2020 Consultant at Disputas
 - Developing the formal and informal logics that are used by the system
 - Defining the boundaries of knowledge representation in the system
 - Designing the layout of the user side of the system
 - Consulting on phil. of language, epistemology, phil. of logic, argumentation theory, and more
- 2019 PhD candidate at Higher School of Economics, Moscow
 - Philosophical aspects of Homotopy Type Theory
- 2017-2018 Seminar leader at the department of Philosophy at Uppsala University
 - Preparing and holding the seminars
- 2017 August Volunteer at EACSL 2017
 - Logistics
 - Photography
 - Coordinator
- 2017 August Volunteer at The Philosophy days at Uppsala University
 - Coordinating visitors
- 2013 July Assistant for a report about the Afar region in Ethiopia for the non-profit organisation APDA
 - Interviewing in the field
 - Presenting the results to the relevant authorities

Invited talks

- “*Inconsistencies and current problems of formalisation in mathematics*” at the summer school “Illuminations” in Tyumen, Siberia, Aug 2019
- “*Introduction to alternative foundations - Homotopy type theory*” at Helsinki department of Mathematics and Statistics, Apr 2018

Conference presentations

- NordPhil 2019, September 2019
“*Mathiness in Economics - an analytic elaboration of Paul Romer’s notion of Mathiness*”
- Federated Logic Conference in Oxford 2018, WiL workshop, July 2018
“*Can every real proof be represented by a formal proof?*”
- The Tenth Scandinavian Logic Symposium, June 2018
“*Inconsistency in informal mathematics*”
- Philosophy in action, May 2017
“*Inconsistency in informal mathematics*”

Conference and workshop participation

- Constructive, appreciative, digital - advice in higher education, May 2022
- Logic Mentoring Workshop, CSL, Feb 2022
- Next Generation AI, Jan 2022
- PhDs in Logic XII, Sep 2021
- Prolog workshop and conference, Sep 2021
- Disagreement in Mathematics Workshop, Jun 2021
- Illuminations Siberian Summer School, Aug 2019
- Nordphil 2019, Sep 2019
- Higher Algebra and Mathematical Physics, Aug 2018
- Workshop on HoTT and univalent foundations at FLoC, Jul 2018
- Tenth Scandinavia logic symposium, Jun 2018
- Logical Perspectives, May 2018
- School + Workshop on UniMath, Dec 2017
- Proof and computation, Sep 2017
- Logic Colloquium, Aug 2017
- The Third Nordic Logic summer school, Aug 2017
- Summer school in mathematical philosophy for female students, Jul 2017
- On crossroads of analysis, algebra, and geometry, May 2017
- Mini-conference for PhD. students in mathematics, May 2017
- Nordphil 2016, May 2016

Teaching experience

- Computational Ethics (2022)
- Temporal logics (2022)
- Logic for computer scientists (2021/22)
- Temporal logics (2021/22)
- Technology enhanced learning (2021/22)
- Reasoning about uncertainty (2021)
- Automated theorem provers (2021)
- Logic (Philosophy) (2017-2018)

Thesis supervising

- “Overview of model-based computational ethics”, B.S. in Computer Science 2021/22
- “Overview of Conway’s Game of Life”, B.S. in Computer science 2021/22
- “Langton's Ant - an Overview”, B.S. in Computer science 2022
- “Evolutionary algorithms”, B.S. in Computer science 2022
- “Evolutionary Algorithms in Automated Machine Learning”, B.S. in Computer science, 2022
- “Classifying the highways of Langton’s ant”, B.S. in Computer science, 2022

- “Philosophical aspects of deep learning”, B.S. in Computer science, 2022

Language proficiency

- English (native)
- Swedish (native)
- TAKK (Swedish simplified sign language)
- German (working proficiency)
- Spanish (basic proficiency)
- Chinese (Mandarin) (basic proficiency)
- Dutch (beginner)

Computer skills

Good familiarity with

- Python
- Excel
- Prolog

Some familiarity with

- Coq
- Haskell
- Java

Relevant courses:

- Logic (third year intro. to formal arguments)
- Logic and proof techniques (second year mathematics course)
- Epistemology (second year course)
- Philosophy of language (third year course)
- Modal logic (third year intro to modal semantics)
- The philosophy of mathematics (third year course with a focus on Wittgenstein)
- Advanced modal logic (master course focusing on temporal logic)
- Metalogic (master course on Gödel’s theorems)
- Metalogic 2 (master course on results of Tarski and Church)
- Good and bad science (master course on the philosophy of science)
- Research methods (master course in the science of the humanities)
- Models of philosophy (master course on mathematical philosophy)
- Philosophy of science (third year theoretical philosophy)
- Contemporary philosophy (focused on phenomenology)
- Philosophy of consciousness (third year theoretical philosophy)
- Value theory (first year applied philosophy)
- Political philosophy (first year applied philosophy)
- Decision theory (second year applied philosophy)
- Bioethics (third year applied philosophy)
- Ethics of migration (third year applied philosophy)

- Decision and risk (master course in applied decision theory)
- Evaluation and metaethics (master course in applied decision theory)

I have also audited the following courses

- Master course on logic (mathematics course given by Vera Koponen)
- Master course on logic 1 (mathematics course given by Erik Palmgren)
- Master course on logic 2 (mathematics course given by Erik Palmgren)
- Master course on Trustworthy AI (philosophy course by Fiorella Battaglia)
- Science and War (philosophy course by Andrei Rodin)

Free time activities:

- Editor/assistant editor for the following categories at PhilPapers, where I have categorised over 1000 papers:
 - Logic and the philosophy of logic
 - Logical semantics and logical truth
 - Areas of Mathematics
 - Algebra
 - Analysis
 - Geometry
 - Topology
 - Areas of Mathematics misc.
- Revisor for Östhammar bonde förening
- Revisor for Sputnik Kollektiv (club association)
- Boardmember of the non-profit association “Fritt kulturhus Uppsala” which runs a culture facility with 2400 members (“Kulturhuset Femman”).
- Organizer of several “ask a philosopher” events
- Founder of a student lead logic discussion group at Stockholm University
- Organizer for “Pussy riot - then and now” seminar with Pussy Riot members Alexey and Lusine, followed by 4 art and music performances (September 2018, Uppsala)
- Organizer for art exhibition with 20 artists, 4 live performances (February 2019, Uppsala)
- Participant in 4 exhibitions with my acrylic paintings featuring ciphered texts
- Create alphabets and number systems with a variety of properties (30+)
- Speaking actor in 3 feature-length movies, 5 art films, 1 theatre production.

Manuscripts and drafts:

- “The Justification for logical shortcuts in machine learning”
- “Towards unexplainable AI”
- “On the problem of formalising arguments”
- “Against a unifying foundation of mathematics”
- “The Hilbert-Gentzen thesis - Can every real proof be represented by a formal proof?”
- “Inconsistency in informal mathematics”

- “Mathiness and lying - Mathiness in the context of philosophical theories of deception”
- “The foundational value of Univalent foundations”
- “Translating between MLTT and Russell’s type theory”
- “Translating between HoTT and ZFC”
- Review of the preprint “Why do we prove theorems?”

Referees:

Ryzard Sliwinski (previous co-worker)

Rysiek.sliwinski@filosofi.uu.se

+4618-4717351

Professor Andrei Rodin (previous PhD. supervisor)

andrei@philomatica.org