

Nicolas Münnich

PhD Student

About

German
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Contact

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Languages

English
German

References

Supervisor:
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Work Supervisor:
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I am a very fast learner and I love being challenged. I can adapt easily to new and changing environments. I have a lot of patience, particularly when it comes to solving problems. When faced with a problem I can't solve, I tend to continually work at it until I either solve it or come to a conclusion as to why I can't solve it currently. My primary motivation for doing a PhD is simply that I love learning. I think of research as a process where you learn new things that nobody else has learned before, and then getting to share what you've learned with the world.

Interests

I'm most interested in working on bleeding-edge areas, furthering the boundaries of human ability. I enjoy the theoretical mathematical side of computer science, and I find areas connected to programming language design fascinating. I also enjoy working on low level programming areas, such as optimization, concurrency, and compiler design.

Education

since 2020	Doctoral Student Supervisors: Giulio Manzonetto Flavien Breuvert	Université Sorbonne Paris Nord
2016-2020	MCOMP Computer Science First, 77.29% (Boundary: 70%) Bachelor's Dissertation: Analysis and Implementation of a Trace Based Observational Model of Basic SCI, First, 78% Master's Dissertation: Weighted Analysis of Simply Typed Lambda-Calculus Terms, First, 85%	University of Bath, Bath
2013-2015	International Baccalaureate 38 points out of 45 Higher Maths: 6, Higher Physics: 6, Higher Chemistry: 6 Environmental Systems and Societies: 6, German B: 7, English Literature: 5 2 additional points from Extended Essay and Theory of Knowledge essay	St Clare's College, Oxford

Programming skills

Python



Java • Haskell • Rust



C • L^AT_EX • MATLAB



CSS • HTML • TypeScript/JavaScript



Experience

- 10 2019-
05 2020 **University of Bath, Bath** Teaching Assistant
Running tutorials for first and second year undergraduate students
I taught Principles of Programming in my first semester, and taught Functional Programming in my second semester. This is my first paid in person teaching position, and I enjoy it a lot. I find teaching relaxing and enjoyable, it helps reinforce what I already know.
- 11 2018-
06 2020 **TheSUBath - Latin and Ballroom** Committee Member - Volunteer Position
Secretary and Representative
I was a representative for the newcomers to the club last year, and this year I took on the role of secretary. I improved my organisational skills and communication skills, and learned about the (sometimes harsh) realities of needing to make tough decisions.
- 07–08 2018 **ETH Zurich, Zurich** Technical Assistant
Rewriting a postgrad unit from MATLAB to Python.
This position is an excellent example of my ability to work independently, as I received little to no support due to my co-workers having little experience with Python. The most valuable skill I learned was the ability to manage mental stamina - how to stay productive and active while working for 8+ hours at a time. I also demonstrated my time-management skills from adjusting my work schedule on the fly based on roadblocks I encountered.

Projects of significance

- 2019-2020 **Weighted Analysis of Simply Typed Lambda-Calculus Terms** Master's Thesis
Weighted relational models are a way of extracting a diverse amount of information from a program through the enhancement of relational models. In this work weighted relational models are extended to the simply typed lambda-calculus, presenting a method of extracting information from the model using an enhanced simply typed lambda-calculus. The quality of the information extracted is also discussed by analysing to which degree the values are precisely calculable and to which degree they can only be approximated.
- 2018-2019 **Analysis and Implementation of a Trace Based Observational Model of Basic SCI**
Bachelor's Thesis
Basic SCI is a programming language grounded in mathematical theory, with little implementations created around it. This project is on generating a complete representation of a Basic SCI program using a fully abstract trace based mathematical model developed by G. McCusker. Of particular note is the work done on abstraction over numbers and the various challenges and solutions involved.
- 2018 **--C Compiler** University Project
A simple compiler written for a language named --C. The language is a simplified version of C with variables being integers or functions, and included higher order functions. The compiler was written in C, and the target architecture was MIPS32.

Activities:

I picked up latin and ballroom dancing in my third year of my undergraduate degree and fell in love with it. I enjoy both the social and competitive side of dancing, latin and ballroom dancing is one of few activities I've found where you and your partner each need to cooperate and trust each other. My secondary physical activity is rock climbing, which shares a very strong feeling of partnership by having your life in your partners hands and vice versa.

I also enjoy singing, I have been a part of two musicals and participated in choir for multiple years. I generally enjoy being on stage and in front of a crowd, there's not a bone in my body with stage fright. I've been in a number of theatre productions and am always willing to take the leading role in presentations.