

DOMINIK KLUMPP

PERSONAL INFORMATION

Born in São Paulo, Brazil, 1994

nationality German, Brazilian

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EDUCATION

*PhD student
Computer Science*

since 2019 University of Freiburg

PhD studies at the chair for Software Engineering, centered around automatic program verification, in particular for concurrent programs. I am extending Partial Order Reduction techniques, often used in finite-state model checking, to the verification of infinite-state programs.

Advisor: Prof. Andreas Podelski

*M.Sc. Software
Engineering*

2016–2018 University of Augsburg, TU Munich, LMU Munich

Elite Graduate Program *Software Engineering* by the University of Augsburg, the Technical University of Munich and the Ludwig-Maximilians-University Munich. The program is centered around the five subject areas *Software Engineering, Formal Methods, Distributed Systems, Databases* and *Human-Computer Interaction*. My personal focus was on the first two of these topics, especially on *Formal Methods*.

Thesis: *Automated Control Flow Reconstruction from Assembler Programs*

The research for my master thesis was conducted at and in cooperation with Macquarie University, Sydney. I adapted the automated verification technique *trace abstraction refinement* in order to build provably sound and precise control flow graphs for assembler programs with indirect branches.

Final grade: 1.0 [grading scheme: 1.0 (best) – 5.0 (failed)]

Advisor: Prof. Wolfgang Reif

Supervisors: Prof. Franck Cassez (Macquarie University), Dr. Gerhard Schellhorn

*B.Sc. Computer
Science*

2013–2016 University of Augsburg

Thesis: *Optimising Runtime Safety Analysis Efficiency for Self-Organising Systems*
I wrote my bachelor thesis at the *Institute for Software and Systems Engineering* at the University of Augsburg. A short version of the thesis was published at the QA4SASO workshop on the *FAS* 2016* conference in Augsburg.

Final grade: 1.3 [grading scheme: 1.0 (best) – 5.0 (failed)]

Advisors: Prof. Wolfgang Reif

Supervisors: Dr. Axel Habermeier, Dr. Benedikt Eberhardinger, Dr. Hella Seebach

WORK EXPERIENCE

*Researcher /
PhD candidate*

since 2019 Researcher / PhD candidate at the Chair for Software Engineering, UNIVERSITY OF FREIBURG

Research on automatic verification with a focus on concurrent programs.

Co-organised several lectures offered by the Software Engineering group, in particular *Program Verification, Cyber-Physical Systems: Discrete Models* and *Theoretical Computer Science*. This involved designing weekly exercise sheets, coordinating student tutors, marking students' submissions, teaching a weekly exercise session, occasionally substituting for the lecturer, as well as designing, administering and marking the final exam.

Supervised students in several seminars offered by the Software Engineering group, in particular *Automata Theory* and *Program Analysis*.

Supervised several B.Sc. and M.Sc. theses and projects.

- 2016–2018 Student Assistant at the Institute for Software and Systems Engineering, UNIVERSITY OF AUGSBURG
- Student Assistant*
- Research on safety analysis and on quality assurance for self-organizing systems. Contributed to the development of the S# modeling, safety analysis and simulation framework. Modeled and analyzed multiple case studies of self-organizing systems. Co-authored 3 scientific publications.
- 2017 Summer 2017 Internship, ZUEHLKE ENGINEERING AG — Munich
- Zuehlke*
- Developed an Angular web application with a dockerized microservice backend based on Java and Spring Boot. Interfaced with several project and development management tools to display project status information.
- 2015–2017 Tutor at the Chair for Theoretical Computer Science, UNIVERSITY OF AUGSBURG
- Tutor: Theoretical Computer Science*
- Worked as tutor for the *Introduction to Theoretical Computer Science* lecture in the summer semesters 2015, 2016 and 2017. This involved teaching a weekly exercise class, marking students' homework and assisting in supervision and marking of the final exam.
- 2015–2016 Tutor at the Chair for Programming Methodology and Multimedia Information Systems, UNIVERSITY OF AUGSBURG
- Tutor: Discrete Structures*
- Worked as tutor for the *Discrete Structures for Computer Scientists* lecture in the winter semesters 2015 and 2016. This involved teaching a weekly exercise class, marking students' homework and assisting in supervision and marking of the final exam.
- 2015 Summer 2015 itestra CodingCamp internship, ITESTRA — Munich
- itestra*
- Developed a prototype for a Windows mobile app with a Java backend.

OTHER INFORMATION

Languages

- GERMAN · First language
- ENGLISH · Fluent, written and spoken
- FRENCH · DELF B1
- CHINESE · YCT I, HSK II

Summer Schools

- 2023 · 41st Summer School Marktoberdorf on Safety and Security through Formal Verification, Marktoberdorf, Germany
events.model.in.tum.de/mod23/
- 2020 · 14th Summer School on Modelling and Verification of Parallel Processes (MOVEP), virtual
projects-verimag.imag.fr/movep2020
- 2019 · VMCAI Winter School, Lisbon, Portugal
vmcaischool19.tecnico.ulisboa.pt

Stays Abroad

- CANADA 2022 · Research Visit at University of Toronto
- AUSTRALIA 2018 · Research & Master Thesis at Macquarie University, Sydney
- CHINA 2013 · Chinese Bridge summer camp Confucius Institute
- CHINA 2010 · Student Exchange High School of Beijing University
- FRANCE · Student Exchanges 2007/2008, 2009/2010 and 2010/2011

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