

DOMINIK KLUMPP

PERSONAL INFORMATION

Born in São Paulo, Brazil, 1994

nationality German, Brazilian
email klumpp@informatik.uni-freiburg.de
website dominik-klumpp.net

EDUCATION

*PhD candidate
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

ACADEMIC SERVICE

Reviewer

SPIN'25 · Program Committee member

OOPSLA · External Reviewer ('22-'23)

SV-COMP · Program Committee member ('21-'25)

Jury member for Ultimate Kojak ('21)

Jury member for Ultimate GemCutter ('22 - '25)

Organiser

AVM'24 · Co-organised the 16th Alpine Verification Meeting (AVM'24), 4th - 6th September 2024 in Freiburg; a workshop with 67 participants.

avm2024.informatik.uni-freiburg.de

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. Lecturer for the lecture <i>Program Verification</i> in the summer semester 2024. Co-organised several lectures offered by the Software Engineering group, in particular <i>Program Verification</i> , <i>Cyber-Physical Systems: Discrete Models</i> and <i>Theoretical Computer Science</i> . 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 <i>Automata Theory</i> and <i>Program Analysis</i> . Supervised several B.Sc. and M.Sc. theses and projects.
	2016–2018	Student Research Assistant at the Institute for Software and Systems Engineering, UNIVERSITY OF AUGSBURG
Student Research Assistant		Research on safety analysis and on quality assurance for self-organizing systems. Contributed to the development of the <i>S#</i> modeling, safety analysis and simulation framework. Modeled and analyzed multiple case studies of self-organizing systems. Co-authored 3 scientific publications.
Zuehlke	Summer 2017	Internship, ZUEHLKE ENGINEERING AG — Munich
		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.
Tutor: Theoretical Computer Science	2015–2017	Tutor at the Chair for Theoretical Computer Science, UNIVERSITY OF AUGSBURG
		Worked on the lecture <i>Introduction to Theoretical Computer Science</i> 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 exam.
Tutor: Discrete Structures	2015–2016	Tutor at the Chair for Programming Methodology and Multimedia Information Systems, UNIVERSITY OF AUGSBURG
		Worked on the lecture <i>Discrete Structures for Computer Scientists</i> 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 exam.
itestra	Summer 2015	itestra CodingCamp internship, ITESTRA — Munich
		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 & Research Visits

- GERMANY 2025 · Visit at Max-Planck-Institute for Software Systems (Kaiserslautern)
- FRANCE 2025 · Visit at Université Paris Cité (IRIF) and École Polytechnique (LIX)
- AUSTRIA 2024 · Visit at IST Austria
- SWEDEN 2024 · Visit at Uppsala Universitet
- CANADA 2022 · 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

April 23, 2025