

# DOMINIK KLUMPP

## PERSONAL INFORMATION

*Born in São Paulo, Brazil, 1994*

*nationality*      German, Brazilian

*email*              [klumpp@informatik.uni-freiburg.de](mailto:klumpp@informatik.uni-freiburg.de)

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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

**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

**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.

Student Assistant	2016–2018	Student Assistant at the Institute for Software and Systems Engineering, UNIVERSITY OF AUGSBURG
		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.
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 as tutor for the <i>Introduction to Theoretical Computer Science</i> 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.
Tutor: Discrete Structures	2015–2016	Tutor at the Chair for Programming Methodology and Multimedia Information Systems, UNIVERSITY OF AUGSBURG
		Worked as tutor for the <i>Discrete Structures for Computer Scientists</i> 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.
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	2020	· 14th Summer School on Modelling and Verification of Parallel Processes (MOVEP), virtual <a href="https://projects-verimag.imag.fr/movep2020">projects-verimag.imag.fr/movep2020</a>
	2019	· VMCAI Winter School, Lisbon, Portugal <a href="https://vmcaischool19.tecnico.ulisboa.pt">vmcaischool19.tecnico.ulisboa.pt</a>
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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