DOMINIK KLUMPP

PERSONAL INFORMATION

Born in São Paulo, Brazil, 1994

nationality German, Brazilian

email klumpp@informatik.uni-freiburg.de

website https://dominik-klumpp.net

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.

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.

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.

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

2020 · 14th Summer School on Modelling and Verification of Parallel Processes (MOVEP), virtual
http://projects-verimag.imag.fr/movep2020/

2019 · VMCAI Winter School, Lisbon, Portugal
http://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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