Thomas Pani

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EDUCATION

TU WIEN
PhD in Computer Science
Feb 2014–Present | Vienna, AT

Dipl.-Ing. in Computer Science
Jan 2014 | Vienna, AT

BSc in Computer Science
Oct 2010 | Vienna, AT

RESEARCH INTERESTS

Formal methods
Software verification
Static program analysis
Science communication

ACTIVITIES

External reviewer
FMCAD'17, STACS'17, FMCAD'16, ESSOS'16
Member of organizing committee
Vienna Science Ball 2015–Present
Vienna March for Science 2017
Local co-organizer
Vienna Summer of Logic 2014

SKILLS

LANGUAGES
German (native)
English (fluent)
Spanish (basic)

PROGRAMMING
Proficient:
C, C++, C#, Java, JavaScript, OCaml, PHP, Python, Shell · CSS, SQL, XML
Familiar:
Assembly, Eiffel, Haskell, Perl, Ruby, Smalltalk

SOFT SKILLS
I regularly participate in workshops on communication and presentation skills.

LINKS

github: thpani | homepage: thpani.net

PROFESSIONAL EXPERIENCE

WOLFGANG PAULI INSTITUTE and TU WIEN | Researcher, Research and Teaching Assistant
Feb 2014 – Present | Vienna, AT

- Working on automated complexity analysis of shared-memory concurrent programs. Implementation: Coachman (in OCaml).
- Co-created VeriFolio, a machine learning-based portfolio software verification algorithm, and created Sloopy, a Clang-based tool for predicting empirical hardness of automated program analysis of loops in C programs.
- Created Kripke Builder, an interactive frontend for manipulating kripke structures and evaluating temporal logic formulae.
- Taught and assisted courses within the group's research focus.

GOOGLE | PhD SWE Intern, Data Center Software team
May 2018 – Aug 2018 | Mountain View, CA

- Developed a tool for systematic inconsistency detection in machine health data using formal methods. Implemented using various Google frameworks (Bigtable, Dremel, Flume, Protobufs, RecordIO) and the Z3 SMT solver in C++.

TU WIEN | Project assistant & Undergrad TA
Oct 2009 – Jan 2014 | Vienna, AT

- Created Sloopy, a Clang-based tool for predicting empirical hardness of automated program analysis of loops in C programs.
- TA for the object-oriented programming course. Led exercise groups and designed exercises.

SIEMENS | Software Engineering Intern
Aug 2008, Aug 2009 – Sept 2009 | Vienna, AT

- Implemented a tool in Perl to quickly inject large amounts of configurable test data into a read-optimized directory service.

RAIFFEISEN INFORMATIK | System Administration Intern
Sept 2008 | Vienna, AT

FURTHER EXPERIENCE

NURSING SCHOOL TULLN | Teacher
Mar 2011 – Feb 2014 | Tulln, AT

AUSTRIAN RED CROSS | Volunteer
Sep 2012 – Present | Vienna, AT

AWARDS

2018	FMCAD'18 best student contribution
2017	FMCAD'17 best student contribution
2014	Faculty's award for best diploma thesis
2013	Participated in TU Wien's high potential program
2009–2011	TU Wien's academic excellence scholarship

PUBLICATIONS

[1] T. Pani, G. Weissenbacher and F. Zuleger. 'Rely-Guarantee Reasoning for Automated Bound Analysis of Lock-Free Algorithms'. In: ***Formal Methods in Computer Aided Design, FMCAD 2018***. (to appear). 2018.

[2] Y. Demyanova, T. Pani, H. Veith and F. Zuleger. 'Empirical software metrics for benchmarking of verification tools'. In: ***Formal Methods in System Design*** 50.2-3 (2017).

[3] Y. Demyanova, T. Pani, H. Veith and F. Zuleger. 'Empirical Software Metrics for Benchmarking of Verification Tools'. In: ***Computer Aided Verification, CAV 2015, Proceedings***. 2015.

[4] T. Pani, H. Veith and F. Zuleger. 'Loop Patterns in C Programs'. In: ***ECEASST*** 72 (2015).

[5] T. Pani. 'Loop Patterns in C Programs'. MA thesis. TU Wien, Jan. 2014.