

Ivan Radiček

Curriculum Vitae

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Research Interest

My interests are in *Programming Languages*, *Program Synthesis*, *Formal Methods*, *Verification*, *Type Systems*, and *Programming Education*. I currently work on *Program Synthesis using Examples*, while my earlier work was on automating feedback for introductory programming assignments, using formal methods and programming languages technology.

Education

Academic

- 2014–Present **PhD in Computer Science**, TU WIEN, Vienna, Austria.
- 2010–2012 **Master of Science in Computing**, *University of Zagreb, Faculty of Electrical Engineering and Computing*, Zagreb, Croatia, Thesis: Design of Bayesian network based on stochastic simulation reasoning.
- 2006–2010 **Bachelor of Science in Computing**, *University of Zagreb, Faculty of Electrical Engineering and Computing*, Zagreb, Croatia, Undergraduate Thesis: Lightweight formal system verification.

Summer Schools

- April, 2016 **Spring School on Logic and Verification 2016**, Vienna, Austria.
- August, 2015 **Summer School Marktobendorf 2015**, Marktobendorf, Germany.
- July, 2014 **SAT/SMT Summer School 2014**, Semmering, Austria, (*Award of Excellence*).

Experience

- 2017–Present **Research Software Engineer**, *Microsoft*, Vienna, Austria, PROSE (<https://microsoft.github.io/prose/>) team.
- 2013–2017 **Project Assistant**, TU WIEN, FORSYTE group, Vienna, Austria.
- September–December 2015 **Intern**, *MPI-SWS*, Saarbrücken, Germany.
Worked with Deepak Garg on type-based relational cost analysis.
- 2008–2013 **Software developer and system engineer**, IMENIK D.O.O., Zagreb, Croatia.
Web development (Python, PHP, Java), Web crawling and scripting, System administration (GNU/Linux, Oracle database, Windows), Network administration (Cisco).

Activities

- July, 2014 **Vienna Summer of Logic**, *Volunteer Collaborator of the Organization*, July 9th to 24th, Vienna, Austria.

- 2012 **Python workshop**, *Culture Shock festival*, Križevci, Croatia.
Teaching Python & OO fundamentals
- 2008 **Computing and advanced algorithms teaching**, *Computing club Križevci (Informatički klub Križevci)*, Križevci, Croatia.
Preparing high school students for computing competition

Publications

Monadic refinements for relational cost analysis, *POPL '18*, 2018, With Gilles Barthe, Marco Gaboardi, Deepak Garg, and Florian Zuleger.
(to appear)

Automated Clustering and Program Repair for Introductory Programming Assignments, *arXiv*, 2017, With Sumit Gulwani and Florian Zuleger.
(under submission)

Feedback Generation for Performance Problems in Introductory Programming Assignments, *FSE 2014*, November 16-21, 2014 Hong Kong, With Sumit Gulwani and Florian Zuleger.

Tools

clara, <https://github.com/iradicek/clara>, A tool for automated clustering and repair of introductory programming assignments.

Awards

Verification Mentoring Workshop Scholarship Award, *Scholarship to attend the Verification Mentoring Workshop (VMW) at CAV*, San Francisco, USA.

Programming Language Mentoring Workshop Scholarship Award, *Scholarship to attend the SIGPLAN Programming Languages Mentoring Workshop (PLMW) at POPL*, Mumbai, India.

Talks

Automated Clustering and Program Repair for Introductory Programming Assignments, *11th Alpine Verification Meeting (AVM 2017)*, Visegrád, Hungary, 18-21 September 2017.

Dynamic Program Analysis-based Approach for Algorithm Recognition and Program Repair, *Microsoft Research, Redmon, US*, July 2017.

Feedback Generation for Performance Problems in Introductory Programming Assignments.

- 22nd International Symposium on the Foundations of Software Engineering (FSE 2014), 16-21 Nov 2014, Hong Kong
- 9th Alpine Verification Meeting, 12-14 May 2014, Frejus, Cote d'Azur, France
- 2nd Workshop on Programming Languages Technology for Massive Open Online Courses (PLOOC 2014), June 13 2014, Co-Located With PLDI 2014, Edinburgh, UK

Computer skills

Languages PYTHON, OCAML, C/C++ COQ, JAVA, C#, JAVASCRIPT, HTML, PHP
Other GNU/LINUX, L^AT_EX, Virtualization, PostgreSQL, MySQL, git, SVN, Program Synthesis using Examples

Languages

Croatian **Native speaker**
English **Conversationally fluent**
German **Basic understanding**