Filip Nikšić

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Research Interests

Analysis, verification, and testing of concurrent and distributed systems. In particular, I am interested in applying combinatorial techniques to systematic and random testing.

Education

09/2012–05/2019 — **Max Planck Institute for Software Systems (MPI-SWS)**

Doctor of Engineering (Dr.-Ing.) degree by Technische Universität Kaiserslautern
Dissertation: Combinatorial Constructions for Effective Testing
Grade: summa cum laude

10/2009–10/2011 — **Department of Mathematics, University of Zagreb**

Enrolled in a doctoral program in mathematics

07/2004–10/2009 — **Department of Mathematics, University of Zagreb**

Dipl. Ing. (4-year degree) in Mathematics (profile: Computer Science)
GPA: 4.7 / 5.0

Work Experience

10/2018–*present* — **University of Pennsylvania**

Postdoctoral researcher, working with Rajeev Alur

09/2012–10/2018 — **Max Planck Institute for Software Systems (MPI-SWS)**

Doctoral researcher, advised by Rupak Majumdar

05/2016–08/2016 — **Microsoft Corp., Redmond, Washington**

Research intern working on a testing and fault-injection framework for concurrent software. Technologies: C#, .NET Compiler Platform ("Roslyn")

04/2010–09/2012 — **IN2 d.o.o., Zagreb, Croatia**

Software engineer developing financial software. Technologies: Oracle DB (SQL, PL/SQL), Java (Spring Framework), and Adobe Flex

Teaching Experience

10/2016–02/2017 — **Max Planck Institute for Software Systems (MPI-SWS)**

Teaching assistant: Program Analysis (Winter 2016/2017)

04/2014–07/2014 — **Max Planck Institute for Software Systems (MPI-SWS)**

Teaching assistant: Verification of Reactive Systems (Summer 2014)

03/2008–09/2009 — **Department of Mathematics, University of Zagreb**

Student assistant: Set theory (Summer 2008), Introduction to parallel computing (Winter 2008), Application of parallel computers (Summer 2009).

09/2002–06/2005 — **Informatics Club NET, Ivanić-Grad**

Tutoring high school students for programming competitions

Professional Service

Artifact evaluation committee: ISSTA 2015, ECOOP 2018, CAV 2019

Conference reviews: CAV 2013, CSL 2013, FMCAD 2013, EMSOFT 2014, FMCAD 2014, LICS 2014, CADE 2015, VMCAI 2015, POPL 2016, TACAS 2016, VMCAI 2017, ICALP 2018

Journal reviews: ACM Transactions on Computational Logic, Acta Informatica

Technical Skills

Operating systems: GNU/Linux, Mac OS X, Windows

Programming languages: C/C++, C#, Java, Python, PL/SQL, ActionScript (Flex)

Databases: Oracle DB

Language Skills

Croatian (native), English (fluent), German (basic)

Publications

Burcu Kulahcioglu Ozkan, Rupak Majumdar, F. N. *Checking Linearizability Using Hitting Families.* PPoPP 2019

Burcu Kulahcioglu Ozkan, Rupak Majumdar, F. N., Mitra Tabaei Befrouei, Georg Weissenbacher. *Randomized Testing of Distributed Systems with Probabilistic Guarantees.* PACMPL 2 (OOPSLA) 2018

Rupak Majumdar, F. N. *Why is Random Testing Effective for Partition Tolerance Bugs?* PACMPL 2 (POPL) 2018

Dmitry Chistikov, Rupak Majumdar, F. N. *Hitting Families of Schedules for Asynchronous Programs.* CAV 2016

Ivan Gavran, F. N., Aditya Kanade, Rupak Majumdar, Viktor Vafeiadis. *Rely/Guarantee Reasoning for Asynchronous Programs.* CONCUR 2015

Sumit Gulwani, Mikaël Mayer, F. N., Ruzica Piskac. *StriSynth: Synthesis for Live Programming.* ICSE 2015

Javier Esparza, Ruslán Ledesma-Garza, Rupak Majumdar, Philipp Meyer, F. N. *An SMT-Based Approach to Coverability Analysis.* CAV 2014

Johannes Kloos, Rupak Majumdar, F. N., Ruzica Piskac. *Incremental, Inductive Coverability.* CAV 2013

Philadelphia, July 10, 2019