Ali Sinan Köksal

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Research Interests

Programming language design, software verification and synthesis, and computational systems biology.

Education

2011-present **Ph.D., Computer Science**, *University of California, Berkeley*, Berkeley, CA.
Advisor: Rastislav Bodík. Thesis topic: "Program synthesis for systems biology."

2009-2011 **M.Sc., Computer Science**, *Swiss Federal Institute of Technology (EPFL)*, Lausanne, Switzerland.
Advisor: Viktor Kuncak. Thesis: "Constraint programming in Scala."
Ranked first in the Section of Computer Science and second in the School of Engineering.

2006-2009 **B.Sc., Computer Science**, *Swiss Federal Institute of Technology (EPFL)*, Lausanne, Switzerland.
Bachelor's project advised by Viktor Kuncak.
Ranked first in the Section of Computer Science.

Publications

CAV 2015 Steven Woodhouse, Nir Piterman, Ali Sinan Köksal, Jasmin Fisher. **Synthesising Executable Gene Regulatory Networks from Single-Cell Gene Expression Data**. *27th International Conference on Computer Aided Verification*, 2015

REGSYSGEN 2014 Ali Sinan Köksal, Anthony Gitter, Kirsten Beck, Aaron McKenna, Saurabh Srivastava, Nir Piterman, Rastislav Bodík, Alejandro Wolf-Yadlin, Ernest Fraenkel, Jasmin Fisher. **Synthesizing signaling pathways from temporal phosphoproteomic data (Abstract)**. *RECOMB/ISCB Conference on Regulatory and Systems Genomics*, 2014

POPL 2013 Ali Sinan Köksal, Yewen Pu, Saurabh Srivastava, Rastislav Bodík, Jasmin Fisher, Nir Piterman. **Synthesis of Biological Models from Mutation Experiments**. *ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages*, 2013

POPL 2012 Ali Sinan Köksal, Viktor Kuncak, Philippe Suter. **Constraints as Control**. *ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages*, 2012

SAS 2011 Philippe Suter, Ali Sinan Köksal, Viktor Kuncak. **Satisfiability Modulo Recursive Programs**. *International Static Analysis Symposium*, 2011

CADE 2011 Ali Sinan Köksal, Viktor Kuncak, Philippe Suter. **Scala to the Power of Z3: Integrating SMT and Programming**. *International Conference on Automated Deduction Tool Demo*, 2011

ICFP 2010 Gilad Arnold, Johannes Hölzl, Ali Sinan Köksal, Rastislav Bodík, Mooly Sagiv. **Specifying and verifying sparse matrix codes**. *ACM SIGPLAN International Conference on Functional Programming (ICFP)*, 2010

Awards and honors

2013 Microsoft Research PhD Fellowship Program finalist

2011 EPFL "SIA Vaudoise - Ingénieurs" prize for the second best Master average for Master studies in engineering

2011 EPFL "ELCA Informatique" prize for the best Master average in the Computer Science section

2009-2011 EPFL Excellence Scholarship at the Master Level for outstanding academic record

Work experience

Summer 2013 **Research intern**, *Microsoft Research*, Cambridge, UK.
Developed algorithms for signaling pathway discovery from high-throughput data using Scala and JavaScript with Jasmin Fisher and Nir Piterman.

Summer 2010 **Intern**, *Swiss Federal Institute of Technology (EPFL)*, Lausanne, Switzerland.
Developed local theory extensions for automated reasoning using Scala with Swen Jacobs in the Laboratory for Automated Reasoning and Analysis (LARA).

Teaching experience

Fall 2014 **Teaching Assistant, Programming Languages**, *University of California, Berkeley*.
Instructor: Rastislav Bodík

Spring 2013 **Teaching Assistant, Programming Languages**, *University of California, Berkeley*.
Instructor: Rastislav Bodík

Fall 2010 **Teaching Assistant, Compiler Construction**, *Swiss Federal Institute of Technology (EPFL)*.
Instructor: Viktor Kuncak

Spring 2009 **Teaching Assistant, Advanced Theoretical Computer Science**, *Swiss Federal Institute of Technology (EPFL)*.
Instructor: Laura Kovàcs

Spring 2009 **Teaching Assistant, Theoretical Computer Science**, *Swiss Federal Institute of Technology (EPFL)*.
Instructor: Thomas A. Henzinger

Languages

English (fluent), French (fluent), Turkish (native).