

# 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

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## 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

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## Work experience

- Summer **Technical intern**, *Sift Science*, San Francisco, CA.
  - 2016 Worked on improving and evaluating machine learning algorithms for fraud detection, and developed tools to efficiently summarize customer data.
- Summer **Research intern**, *Microsoft Research*, Cambridge, UK.
  - 2013 Developed algorithms for signaling pathway discovery from high-throughput data using Scala and JavaScript with Jasmin Fisher and Nir Piterman.
- Summer **Intern**, *Swiss Federal Institute of Technology (EPFL)*, Lausanne, Switzerland.
  - 2010 Developed local theory extensions for automated reasoning using Scala with Swen Jacobs in the Laboratory for Automated Reasoning and Analysis (LARA).

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

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## Skills

### Languages

Scala, Java, Python, JavaScript, C, Bash, Zsh, HTML, CSS.

### Operating systems and tools

Linux, Mac OS X; Git, Mercurial, LaTeX, Z3.

### Spoken languages

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