

Aleksandar Milicevic

CONTACT INFORMATION	32 Vassar St, Office G706 Computer Science and Artificial Intelligence Laboratory Massachusetts Institute of Technology Cambridge, MA 02139 USA	<i>phone:</i> (617) 253-4507 <i>e-mail:</i> aleks@csail.mit.edu <i>web:</i> http://people.csail.mit.edu/aleks
RESEARCH INTERESTS	Declarative programming, specification languages, executable specifications, programming languages, connecting high-level specifications with low-level code, software verification, program synthesis, program analysis, software engineering.	
EDUCATION	Massachusetts Institute of Technology , Cambridge, Massachusetts USA Ph.D. Candidate, Computer Science (expected graduation date: May 2015) <ul style="list-style-type: none">• Advisor: Prof. Daniel Jackson M.S., Computer Science, September 2010 <ul style="list-style-type: none">• Topic: Executable Specifications for Java Programs (advised by Prof. Daniel Jackson) School of Electrical Engineering , Belgrade, Serbia B.Sc. in Computer Science, November 2007 <ul style="list-style-type: none">• Topic: Parallel Test Generation and Execution with Korat (advised by Prof. Dragan Milicev)	
ACADEMIC EXPERIENCE	Massachusetts Institute of Technology , Cambridge, Massachusetts, USA <i>Graduate Student</i> August, 2008 - present Includes current Ph.D. research, Masters level coursework and research projects. <i>Teaching Assistant</i> Spring 2009, Fall 2009 “6.005 Elements of Software Construction”: gave recitations, graded problem sets and projects.	
RESEARCH INTERNSHIPS	Microsoft Research , Redmond, WA, USA <i>Research intern</i> June, 2011 - August, 2011 Worked with Rustan Leino on program synthesis from first-order declarative specifications. Microsoft Research Cambridge , Cambridge, United Kingdom <i>Research intern</i> June, 2009 - August, 2009 Worked with Hillel Kugler on analyzing and executing Live Sequence Charts using SMT. University of Illinois at Urbana Champaign , Urbana, Illinois, USA <i>Visiting Scholar</i> August, 2006 - September, 2006 Worked with Darko Marinov on bounded-exhaustive test input generation.	
INDUSTRY EXPERIENCE	Serbian Object Laboratories , Belgrade, Serbia <i>Software Engineer</i> March, 2006 - August, 2008 Actively worked on the development of the EDMT Server (www.bmmsoft.com). Technologies used: WebWork, Java Servlets, WS, SOAP, JSP, HTML, CSS, JS, AJAX, with Sybase IQ database. Google Inc. , New York, New York, USA <i>Software Engineering Intern</i> July, 2007 - September, 2007 Worked with Nemanja Petrovic on decoding barcodes from images taken with a cell phone.	

RESEARCH
PROJECTS

- *Alloy** (<http://alloy.mit.edu/alloy/hola>): a general-purpose, higher-order relational constraint solver (over bounded domains).
- *α Rby* (<http://people.csail.mit.edu/aleks/arby>): an embedding of a declarative modeling/specification language (alloy) into an imperative object-oriented programming language (ruby).
- *Squander* (<http://people.csail.mit.edu/aleks/squander>): a unified environment for execution of declarative specification (written in first-order relational logic) and imperative Java code.
- *Jennisys* (<http://research.microsoft.com/en-us/projects/jennisys>): a programming language and a synthesis tool from declarative first-order specifications to imperative code.
- *The Alloy Analyzer* (<http://alloy.mit.edu>): an automated model finder for a first-order relational specification language.
- *Korat* (<http://korat.sourceforge.net>): a tool for bounded-exhaustive generation of test inputs based on complex constraints the inputs must satisfy.
- *Puzzler* (<http://people.csail.mit.edu/jnear/puzzler>): an automated solver for natural-language logic puzzles (in the style of Einstein's Puzzle).

PUBLICATIONS

- A. Milicevic**, J. P. Near, E. Kang, and D. Jackson. Alloy*: A Higher-Order Relational Constraint Solver, *MIT CSAIL Technical Report, September 2014*.
- A. Milicevic**, and D. Jackson. Preventing Arithmetic Overflows in Alloy (extended journal version), *Science of Computer Programming, May 2014*.
- A. Milicevic**, I. Efrati, and D. Jackson. α Rby—An Embedding of Alloy in Ruby, *ABZ 2014, Toulouse, France*.
- A. Milicevic**, M. Gligoric, D. Marinov, and D. Jackson. Model-Based, Event-Driven Programming Paradigm for Interactive Web Applications, *Onward! 2013, Indianapolis, Indiana, USA*
- K. R. M. Leino, and **A. Milicevic**. Program Extrapolation with Jennisys, *Splash 2012, Tucson, Arizona, USA*.
- A. Milicevic**, and D. Jackson. Preventing Arithmetic Overflows in Alloy, *ABZ 2012, Pisa, Italy*.
- A. Milicevic**, D. Rayside, K. Yessenov, and D. Jackson. Unifying Execution of Imperative and Declarative Code, *ICSE 2011, Waikiki, Honolulu, Hawaii*.
- J. P. Near, **A. Milicevic**, E. Kang, D. Jackson. A Lightweight Approach to Construction and Evaluation of a Dependability Case, *ICSE 2011, Waikiki, Honolulu, Hawaii*.
- A. Milicevic**, and H. Kugler. Model Checking with SMT and Theory of Lists, *3rd NASA Formal Method Symposium (NFM 2011), Pasadena, California, USA*.
- A. Milicevic**. Executable Specifications for Java Programs, *Massachusetts Institute of Technology, Master Thesis, September 2010*.
- D. Rayside, **A. Milicevic**, K. Yessenov, G. Dennis, and D. Jackson. Agile Specifications, *OOPSLA Onward! 2009 (short paper), Orlando, Florida, USA*.
- D. Rayside, Z. Benjamin, J. Near, R. Sing, **A. Milicevic**, and D. Jackson. Equality and Hashing for (almost) Free: Generating Implementations from Abstraction Functions, *ICSE 2009, Vancouver, Canada*.
- S. Misailovic, **A. Milicevic**, N. Petrovic, S. Khurshid, and D. Marinov. Parallel Test Generation and Execution with Korat, *ESEC/FSE 2007, Dubrovnik, Croatia*.
- A. Milicevic**, S. Misailovic, D. Marinov, and S. Khurshid. Korat: A Tool for Generating Structurally Complex Test Inputs, *ICSE Demo 2007, Minneapolis, Minnesota, USA*.

S. Misailovic, **A. Milicevic**, S. Khurshid, and D. Marinov. Generating Test Inputs for Fault-Tree Analyzers using Imperative Predicates, *STEP 2007, Memphis, Tennessee, USA*