Abdulbaki Aydın

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education

phd | computer science
university of california, santa barbara
2011-2017

- research: software verification, program analysis, software security, constraint solving, string analysis, side-channel analysis
- advisor: Tevfik Bultan

bs | computer engineering & electric-electronics engineering
istanbul (fatih) university, istanbul, turkey
2004-2009

skills

languages
experienced
c++ • pyhton • c# • ruby
proficient
java • typescript • powershell • bash

development experience
cloud applications
micro services
distributed queues
distributed databases
library development
network stack

general
tools
vim • vscode • visual studio • LaTeX
os
linux • mac • windows
languages
english • turkish

experience

meta | **software engineer** | 2020 - present

- member of Infrastructure Security Engineering
- member of Traffic Organization
- improving security posture of Meta's edge cloud
- experienced in transport layer security
- experienced in software verification and testing
- experienced in distributed application development

microsoft | **software engineer** | 2017 - 2020

- member of Cloud and AI Security division
- contributed to successful launch of Microsoft Graph Security API
- contributed to successful launch of Microsoft Azure Sentinel
- experienced in scalable, cloud native application development
- experienced in Azure resource provider and Azure portal development

ucsb vlab | **research assistant** | 2012 - 2017

- designed and implemented algorithms and built tools for software side channel analysis as part of the project that is funded by The Space/Time Analysis for Cybersecurity (STAC) program of DARPA
- worked on several DARPA challenges as a member of a team that spans members from UCSB Verification Lab, CMU Silicon Valley and Vanderbilt, achieved top rankings in competitions
- designed and implemented algorithms that uses static analysis techniques to automatically discover and repair web application vulnerabilities

securedocs | **software consultant** | 2014 - 2015

- optimization and new feature development on SecureDocs and ContractWorks products
- experienced in ruby on rails framework and javascript frameworks

ibm | **research intern** | summer 2014

- designed and implemented a user-friendly fine-grained permission control on privacy sensitive data usages which prevents undesired data usages on mobile platforms (Android)
- used dynamic analysis techniques to identify potential privacy violations

appfolio | **software engineering intern** | summer 2013

- contributed to success of SecureDocs before it continues its journey as a separate start up company
- experienced in ruby, backbonejs, pair programming, scrum, agile development, test driven development

ucsb | **teaching assistant** | 2011-2012

- data structures and algorithms, cmpsc 130a
- translation of programming languages, cmpsc 160
- introduction to cryptography, cmpsc 178

hewlett packard | **software developer** | 2009-2011

- member of an R&D project that spans teams from USA, Brazil, and Turkey

publications

books

- Tevfik Bultan, Fang Yu, Muath Alkhalaf, Abdulbaki Aydin: *String Analysis for Software Verification and Security*, *Springer 2017*
- Abdulbaki Aydin: *Automata-based Model Counting String Constraint Solver for Vulnerability Analysis*, *University of California, Santa Barbara, 2017*

conferences

- Abdulbaki Aydin, William Eiers, Lucas Bang, Tegan Brennan, Miroslav Gavrilov, Tevfik Bultan, Fang Yu: *Parameterized model counting for string and numeric constraints*, *ESEC/SIGSOFT FSE 2018*
- Tegan Brennan, Nestan Tsiskaridze, Nicolás Rosner, Abdulbaki Aydin, Tevfik Bultan: *Constraint normalization and parameterized caching for quantitative program analysis*, *ESEC/SIGSOFT FSE 2017*
- Abdulbaki Aydin, David Piorkowski, Omer Tripp, Pietro Ferrara, Marco Pistoia: *Visual Configuration of Mobile Privacy Policies*, *FASE 2017*
- Lucas Bang, Abdulbaki Aydin, Quoc-Sang Phan, Corina S. Pasareanu, Tevfik Bultan: *String analysis for side channels with segmented oracles*, *SIGSOFT FSE 2016*
- Abdulbaki Aydin, Lucas Bang, Tevfik Bultan: *Automata-Based Model Counting for String Constraints*, *CAV 2015*
- Lucas Bang, Abdulbaki Aydin, Tevfik Bultan: *Automatically computing path complexity of programs*, *ESEC/SIGSOFT FSE 2015*
- Abdulbaki Aydin, Muath Alkhalaf, Tevfik Bultan: *Automated Test Generation from Vulnerability Signatures*, *ICST 2014*
- Muath Alkhalaf, Abdulbaki Aydin, Tevfik Bultan: *Semantic differential repair for input validation and sanitization*, *ISSTA 2014*

tutorials

- Tevfik Bultan, Abdulbaki Aydin, Lucas Bang *String Analysis for Vulnerability Detection and Repair*, *PLDI 2016*

workshops

- Abdulbaki Aydin, Muath Alkhalaf, Tevfik Bultan: *Automated Test Generation from Vulnerability Signatures*, *GSWC 2014*

research tools

- ABC: Automata-based model counting constraint solver, *co-author* </>
- Cashew: Constraint normalization and caching for constraint solvers,*contributor* </>
- PAC: A tool for computing path complexity of programs,*co-author* </>
- SemRep: A tool for repairing input validation and sanitization code,*co-author* </>

awards & honors

- best paper award, graduate student workshop, GSWC, 2014, USA
- outstanding teaching assistant, university of california, santa barbara 2012, USA
- high honor, fatih (istanbul) university 2004-2009, Turkey
- ranked as first double major graduate, fatih (istanbul) university 2009, Turkey
- ranked in first 100 among 1.5 million students in the national university entrance exam 2006, Turkey
- ranked as 253_{rd} among 1.5 million students in the national university entrance exam 2004, Turkey