Abdulbaki Aydın

✉ abakiaydinn@gmail.com   ⌨ abakiaydin
☎ +1 805-708-0491   🌐 abdulbakiaydin.me

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
fatih (istanbul) 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

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

experience

meta | software engineer | 2020 - present
- 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