



## education

### phd | computer science

university of california, santa barbara  
2011-2017

- research: software engineering, program analysis, software security, constraint solving, string analysis, side-channel analysis
- advisor: Tefvik Bultan
- gpa: 3.87

### bs | computer engineering & electric-electronics engineering

fatih university, istanbul, turkey  
2004-2009

- graduated with high distinction
- ranked as first double major graduate
- gpa: 3.97

## skills

### languages

experienced

c++ • c# • javascript • typescript • ruby

proficient

java • python • powershell • bash

### development experience

cloud applications

micro services

distributed queues

distributed databases

single page web applications

### general

tools

vim • visual studio • eclipse •  $\text{\LaTeX}$

os

windows • linux • mac

languages

english • turkish

## experience

### meta | software engineer | 2020 - present

- member of Traffic Organization

### 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 new 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, Abdalbaki Aydin: *String Analysis for Software Verification and Security*, Springer 2017 
- Abdalbaki Aydin: *Automata-based Model Counting String Constraint Solver for Vulnerability Analysis*, University of California, Santa Barbara, 2017 


### conferences

- Abdalbaki 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, Abdalbaki Aydin, Tevfik Bultan: *Constraint normalization and parameterized caching for quantitative program analysis*, ESEC/SIGSOFT FSE 2017 
- Abdalbaki Aydin, David Piorkowski, Omer Tripp, Pietro Ferrara, Marco Pistoia: *Visual Configuration of Mobile Privacy Policies*, FASE 2017 
- Lucas Bang, Abdalbaki Aydin, Quoc-Sang Phan, Corina S. Pasareanu, Tevfik Bultan: *String analysis for side channels with segmented oracles*, SIGSOFT FSE 2016 
- Abdalbaki Aydin, Lucas Bang, Tevfik Bultan: *Automata-Based Model Counting for String Constraints*, CAV 2015 
- Lucas Bang, Abdalbaki Aydin, Tevfik Bultan: *Automatically computing path complexity of programs*, ESEC/SIGSOFT FSE 2015 
- Abdalbaki Aydin, Muath Alkhalaf, Tevfik Bultan: *Automated Test Generation from Vulnerability Signatures*, ICST 2014 
- Muath Alkhalaf, Abdalbaki Aydin, Tevfik Bultan: *Semantic differential repair for input validation and sanitization*, ISSTA 2014 





### tutorials

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

### workshops

- Abdalbaki 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 university 2004-2009, Turkey
- ranked as first double major graduate, fatih university 2009, Turkey
- ranked in first 100 among 1.5 million students in the national university entrance exam 2006, Turkey
- ranked as 253<sup>rd</sup> among 1.5 million students in the national university entrance exam 2004, Turkey