Ahmet Çelik

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Work Experience

Summer, 2018 Software Engineer, PhD Intern at Facebook , Washington - U.S.

- Improving test infrastructure

Summer, 2017 Software Engineer, PhD Intern at VMware , Texas - U.S.

- Optimization of the live migration of the disks (SvMotion and XvMotion) by keep tracking of free blocks in the disks
  - Worked on VMware kernel code
  - Created I/O filter to optimize the live migration of disks
  - C/C++, Python, Java

Summer, 2014 Software Engineer, Intern at Google , California - U.S.

- Incremental Web Font Loading (https://github.com/ahmet-celik/TachyFon)
  - Faster loading of Japanese, Korean and Chinese fonts
  - Incrementally adding glyphs to the font in the sandboxed filesystem
  - Javascript (Promises, Workers, HTML5 Filesystem), Python, Java

Summer, 2013 Software Developer, Intern at OBSS , Istanbul - Turkey

- Created Internet Banking Application using Java Web Technologies
- Features of application: Creating account in any currency, EFT, Money Transfer, Fast EFT and Money Transfer, Currency Buying and Selling, Paying Bills, Listing Transaction Details, Facebook Integration, The latest currency rates
- Technologies used: JSF 2, Primefaces, Hibernate, MySQL, AJAX, SAX parser

Summer, 2012 Software Developer, Intern at Hazelcast , Istanbul - Turkey

- Implemented a prototype of new client protocol of Hazelcast in Java. It's as fast as the native client

Education

Fall 2015 - Summer 2019 — PhD. in Computer Science, **The University of Texas at Austin**, Austin
3.96/4.00 *fourth year*
Graduate Coursework Combinatorics and Graph Theory, Software Evolution, Advanced Topics in Compilers, Automated Logical Reasoning, Machine Learning, Automated Program Verification, Automated Software Design, Heterogeneous Parallel Computation

Fall 2009 - Spring 2015 — BSc. in Computer Engineering, **Bogazici University**, Istanbul
3.92/4.00 *summa cum laude*
Undergraduate Coursework Operating Systems, Databases, Algorithms and Data Structures, Programming Concepts, Comp. Organization, Differential Equations, Operations Research, System Simulation, Linear Algebra, Signals, Fundamentals of Software Engineering, Automata, Intro to Networks, Concurrent and Distributed Programming, Pattern Recognition

Spring 2014 — Exchange Semester at **The University of Texas at Austin**, Austin
4.00/4.00
Coursework Principals of Computer Sys(Operating Systems), Algorithms and Complexity

Publications

ASE 2019 — **Ahmet Celik**, Karl Palmskog, Marinela Parovic, Emilio Jesús Gallego Arias, and Milos Gligoric. *Mutation Analysis for Coq*. IEEE/ACM International Conference on Automated Software Engineering, to appear, San Diego, California, USA, November 2019.

OOPSLA 2019 — **Ahmet Celik**, Pengyu Nie, Christopher J. Rossbach, and Milos Gligoric. *Design, Implementation, and Application of GPU-based Java Bytecode Interpreters*. ACM International Conference on Object-Oriented Programming, Systems, Languages, and Applications, to appear, Athens, Greece, October 2019.

ESEC/FSE Industrial 2018 — **Ahmet Celik**, Young Chul Lee, and Milos Gligoric. *Regression Test Selection for TizenRT*. Symposium on the Foundations of Software Engineering, Industrial Track, Florida, USA, November 2018.

ISSTA 2018 — Karl Palmskog, **Ahmet Celik**, and Milos Gligoric. *piCoq: Parallel Regression Proving for Large-Scale Verification Projects*. International Symposium on Software Testing and Analysis, Amsterdam, Netherlands, July 2018.

ICSE 2018 — Kaiyuan Wang, Chenguang Zhu, **Ahmet Celik**, Jongwook Kim, Don Batory and Milos Gligoric. *Towards Refactoring-Aware Regression Test Selection*. International Conference on Software Engineering, 233-244, Gothenburg, Sweden, May 2018.

ICSE DEMO 2018 — **Ahmet Celik**, Karl Palmskog, and Milos Gligoric. *A Regression Proof Selection Tool For Coq*. International Conference on Software Engineering, Demo Papers, 117-120, Gothenburg, Sweden, May 2018.

ASE 2017 — **Ahmet Celik**, Karl Palmskog, and Milos Gligoric. *iCoq: Regression Proof Selection for Large-Scale Verification Projects*. IEEE/ACM International Conference on Automated Software Engineering, 171-182, Urbana Champaign, Illinois, USA, November 2017.

OOPSLA 2017 — **Ahmet Celik**, Sreepathi Pai, Sarfraz Khurshid, and Milos Gligoric. *Bounded Exhaustive Test-Input Generation on GPUs*. ACM International Conference on Object-Oriented Programming, Systems, Languages, and Applications, 94:1-94:25, Vancouver, Canada, October 2017.

ESEC/FSE 2017 — **Ahmet Celik**, Marko Vasic, Aleksandar Milicevic, and Milos Gligoric. *Regression Test Selection Across JVM Boundaries*. Joint meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering, pages 809-820, Paderborn, Germany, September 2017.

FSE 2016 — **Ahmet Celik**, Alex Knaust, Aleksandar Milicevic, and Milos Gligoric. *Build System with Lazy Retrieval for Java Projects*. Symposium on the Foundations of Software Engineering, pages 643-654, Seattle, Washington, USA, November 2016.

Selected Projects

Java Instrumentation	Implemented a tool to generate Control Flow graph for Java programs. Implemented line and branch coverage tool for Java programs. I used ObjectWeb's ASM tool.
Bug Prediction	Data mining on different dynamic call graphs derived from different executions of Java program.
PINTOS	Implemented thread scheduling, user programs, virtual memory and file system of PINTOS which is minimal operating system used in many top universities in the US to teach the basics of OS. It was an OS project at The University of Texas at Austin.
Record & Replay of Multithreaded Programs	Used Intel PIN to instrument binary C/C++ programs. Read many alternative approaches in the literature and implemented a simple recording & replaying idea of multithreaded programs. Tested on PARSEC benchmark suite.
Vocabulary Game	Created an Android game. SQLite, Android SDK, Java, Google AdMob.
A social web and android application	Implemented a location based interests application following software engineering methods. Design documents, project plan, testing.
Huffman Encoding	A file compression/decompression program using Huffman Encoding. C++.
Bacon Number	Calculates shortest distance between nodes (artist or movie) in a given graph. Used IMDB databases. C++.
Discrete Event Simulator	A simulation written in Java of a multiple queue systems.
Traveling Salesman Problem	Implemented five different heuristic approaches and compared their efficiency. Java.

Additional Experiences and Awards

Subreview	ISSTA 2017, Onward! 2017
First Place	Graduated From Computer Engineering Department of Bogazici University with a degree.
Bogazici University-Dean's High Honor List	For all semester between Fall 2010 - Fall 2014 (inclusively).
Turkish Prime Minister's Scholarship	For all semesters in Bogazici University.

Programming Languages & Technical Skills

- *Programming Languages:* C/C++, Java, C#, Perl, MatLab, Go, Python, Javascript, PHP, Scheme
- *Program Analysis & Instrumentation:* Intel's PIN Tool, AspectJ , ObjectWeb's ASM, Soot
- *Java Web Technologies:* Java Servets, JSP, JSF, Hibernate, Primefaces
- *Concurrent and distributed programming in Java:* Java Threads, Sockets, RMI
- *Databases* MySQL, PostgreSQL
- *Cloud Programming:* Amazon EC2
- *GPU Programming:* CUDA
- Object Oriented, Android and Web programming

Interests

- Reverse engineering of video games using x64dbg to extract and modify language files for translations to Turkish. For example Batman: Arhkham City. This tool is available on my GitHub https://github.com/ahmet-celik.
- Video Games, Hiking, Soccer, Basketball