

# Ahmet Çelik

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## WORK EXPERIENCE

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*September, 2019-Present*    Research Scientist at META , Washington - U.S.

- Working on Meta's Fault Injection Testing Framework. This framework is used by [BellJar](#) and core service owners to validate reliability of their services.
  - Scaled up the framework to inject faults into twenty thousand hosts from a few hundred hosts.
  - Improved the reliability of the framework by migrating from untyped string-based fault configurations to Thrift-based typed fault configuration. During the migration, increased test coverage of each fault to one-hundred percent.
  - Designed and implemented a new architecture to increase the scale of the fault injection framework to hundreds of thousands of hosts.
  - Improved the injection time of existing faults, such as network faults, by using eBPF-based network faults instead of iptables.

*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

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FALL 2015 - SUMMER 2019	<b>PhD. in COMPUTER SCIENCE, The University of Texas at Austin, Austin</b> 3.96/4.00 <b>Graduate Coursework</b> 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	<b>BSc. in COMPUTER ENGINEERING, Bogazici University, Istanbul</b> 3.92/4.00 <i>summa cum laude</i> <b>Undergraduate Coursework</b> 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	<b>Exchange Semester at The University of Texas at Austin, Austin</b> 4.00/4.00 <b>Coursework</b> Principals of Computer Sys(Operating Systems), Algorithms and Complexity

## PROGRAMMING LANGUAGES & TECHNICAL SKILLS

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

## ADDITIONAL EXPERIENCES AND AWARDS

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<b>Program Committee</b>	ISSTA 2020 Tool Demonstrations
<b>Subreview</b>	ISSTA 2017, Onward! 2017
<b>First Place</b>	Graduated From Computer Engineering Department of Bogazici University with a degree.
<b>Bogazici University-Dean's High Honor List</b>	For all semester between Fall 2010 - Fall 2014 (inclusively).
<b>Turkish Prime Minister's Scholarship</b>	For all semesters in Bogazici University.

## PUBLICATIONS

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- ISSTA 2020 Pengyu Nie, **Ahmet Celik**, Matthew Coley, Aleksandar Milicevic, Jonathan Bell, and Milos Gligoric. *Debugging the Performance of Maven's Test Isolation: Experience Report*. International Symposium on Software Testing and Analysis, 249-259, Los Angeles, California, USA, July 2020.
- ICSE DEMO 2020 Kush Jain, Karl Palmskog, **Ahmet Celik**, Emilio Jesús Gallego Arias, and Milos Gligoric. *mCoq: Mutation Analysis for Coq Verification Projects*. International Conference on Software Engineering, Demo Papers, 89-92, Seoul, South Korea, July 2020.
- TACAS 2020 Karl Palmskog, **Ahmet Celik**, and Milos Gligoric. *Practical Machine-Checked Formalization of Change Impact Analysis*. International Conference on Tools and Algorithms for the Construction and Analysis of Systems, 137-157, Dublin, Ireland, April 2020.
- 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, 539-551, 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, 177:1-177:28, 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, 845-850, 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, 344-355, 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.