

Josh Acay

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RESEARCH

VIADUCT | PHD THESIS PROJECT

December 2018–Present | Cornell University

- Co-created the Viaduct compiler for advanced cryptography
- Viaduct generates code for secure multiparty computation, zero-knowledge proofs, commitments, and replication
- Mentored three undergraduate/master's student contributors
- Published in PLDI'21

WORK EXPERIENCE

FACEBOOK | PHD INTERN

June 2020–August 2020 | Menlo Park, CA

- Implemented an exhaustiveness checker for Erlang pattern matching

WHATSAPP | SOFTWARE ENGINEER

July 2016–August 2017 | Mountain View, CA

- Developed server and client code for metrics collection
- Implemented server in Erlang and client in Java for Android devices
- Designed an online audit tool in Elm to view collected metrics

PDT PARTNERS | SUMMER TECHNOLOGY ANALYST

June 2015–August 2015 | New York, NY

- Built a real-time monitoring system to gather latency statistics using C++
- Used Carbon for metric and Cassandra for associated data storage
- Designed dashboards using Python Flask and Graphite/Grafana

UNION PACIFIC RAILROAD | SOFTWARE ENGINEERING INTERN

June 2014–July 2014 | Omaha, NE

- Set up JIRA project management system for Streamline IT department
- Implemented responsive dashboards using AngularJS, NodeJS, and NVD3
- Integrated data from Postgres database and JIRA RESTful API service

PROJECTS

CUDAPY | PARALLEL COMPUTER PROGRAMMING

Spring 2015 | Carnegie Mellon University

- Added GPU programming to Python through NVIDIA's CUDA API
- Implemented a runtime library using Python, Haskell, and CUDA C
- Ranked 4th among 70 projects by judges from Intel and NVIDIA

C0 COMPILER | COMPILER DESIGN

Fall 2014 | Carnegie Mellon University

- Implemented an optimizing compiler for a subset of C in Haskell
- Ranked 2nd best in code optimization among 40 teams
- Extended the language and the compiler with first-class functions

EDUCATION

CORNELL UNIVERSITY

PHD IN COMPUTER SCIENCE

May 2023 (Expected) | Ithaca, NY

CARNEGIE MELLON UNIV.

BS IN COMPUTER SCIENCE

May 2016 | Pittsburgh, PA

- GPA: 4.00/4.00
- Carnegie Mellon University Honors
- School of Computer Science College Honors

SKILLS

PROGRAMMING

Kotlin • Haskell • Python • C/C++ • Java
• Scala • Erlang • Standard ML • \LaTeX

WEB DESIGN

React • Elm • AngularJS • Flask

TOOLS

Docker • Gradle • Nix • Conan

LANGUAGES

English • Turkish

TEACHING ASSISTANCE

CORNELL UNIVERSITY

CS 4120: Compilers (Spring 2018)

CS 3110: Data Struct. and FP (Fall 2017)

CARNEGIE MELLON UNIV.

15-418: Parallel Prog. (Spring 2016)

15-314: PL Semantics (Spring 2015)

15-210: Data Structures (Fall 2014)

15-150: Functional Prog. (Spring 2014)

15-150: Functional Prog. (Fall 2013)

15-122: Imperative Prog. (Summer 2013)