ZACHARY SUSSMAN

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Enthusiastic CS major with experience in both team and individual work settings.

PROGRAMMING LANGUAGES

Python
Javascript
C++
C
Objective-C
Hack/PHP
HTML5/CSS
Java
Standard ML
Haskell
OCaml

FRAMEWORKS

React.js
Flow
GraphQL
UIKit
Leaflet.js

SOFTWARE

LaTeX
Git and Github
Mercurial

KEY COURSES

Compiler Design
Foundations of Programming Languages
Introduction to Machine Learning
Probability and Computing
Computational Discrete Mathematics
Algorithm Design and Analysis
Research and Innovation in Computer Science
Human-Robot Interaction
Great Theoretical Ideas in Computer Science
Parallel and Sequential Data Structures and Algorithms
Introduction to Computer Systems
Mathematical Studies Algebra I and II
Mathematical Studies Analysis I
Vector Analysis
Matrices and Linear Algebra

Education

Carnegie Mellon University
B.S Computer Science, Expected May 2020
QPA/GPA: 3.96, SCS Dean's List

Employment

Aurora · Software Engineering Intern — May 2019 to Aug. 2019
- Designed and built a machine-learned cost function for trajectory planning using Tensorflow
- Created a tool to leverage existing resources to allow automatic generation of labeled data for learning

Facebook · Software Engineering Intern — May 2018 to Aug. 2018
- Created, integrated, and shipped a new component of an internal tool using React.js, Flow, and GraphQL
- Wrote Hack scripts and acted as liaison for a mass import of data in order to migrate away from a third-party provider
- Migrated data between storage solutions, pioneering the use of a new migration process

Apple · Software Engineering Intern — May 2017 to Aug. 2017
- Designed and developed new features for iWork for iPad using Objective-C++
- Selected and adapted algorithms from the literature to work for our applications
- Created a fully localized user interface for a concurrent backend algorithm

Carnegie Mellon University · Teaching Assistant — Aug. 2017 to Dec. 2017
- Developed teaching content, led recitation sessions, held office hours, and graded student work
- Prof. John Mackey, 15-151: Mathematical Foundations for Computer Science

Research

School of Computer Science Senior Honors Thesis — 2019 to 2020
- Researched sum-of-squares optimization as applied to statistical estimation

In-Sight: Tension-Based Haptic Feedback to Improve Mobility and Navigation for Blind People — 2018 to 2019
- Developed software to control a new wearable navigation assistant for those with visual impairments
- Designed and implemented algorithms for LIDAR perception and haptic feedback
- Presented at Hacking Blind Navigation workshop at CHI 2019 and at Meeting of the Minds at Carnegie Mellon in 2018 and 2019

Mobility Data Analytics Center at CMU — 2017
- Optimized web interface for traffic prediction models
- Designed and built bikeability visualization using Leaflet.js

Projects

Little-CC: A minimal self-hosting C compiler — 2016
- Designed and built a self-hosting compiler for a large subset of C, targeting x86-64 machine code

Introduction to Esoteric Programming Languages (Student-Taught Course) — 2019
- Created and taught a student-taught course on esoteric programming languages, ones not used for practical purposes

Automatic Particle Detection in Cloud Chambers — 2015 to 2016
- Developed algorithms in Python with OpenCV to detect subatomic particles in a homemade cloud chamber

Awards

Honorable Mention, Osher Lifelong Learning Institute Competition, Meeting of the Minds at CMU — 2019

The William Lowell Putnam Mathematical Competition, ranked Top 200 in 2016 and 2017, top 500 in 2018

Phi Kappa Phi — 2019

National Merit Scholar, National AP Scholar, Salutatorian, Mu Alpha Theta Mary Rhein Memorial Scholarship — 2016

Activities

President · Alpha Epsilon Pi — Current
- Led 50 member, $400,000/year organization through successful recruitment cycles and activities
- Created new cross-organization board to encourage cooperation among various student groups

Vice President · Transportation Club — 2016 to 2018
- Organized, promoted, and presented at events including project sessions and transportation lectures

President · Hillelujah — Current
- Organized performances, auditions, and social outings for a cappella group and led integration efforts with other CMU groups

Volunteering
- Greek Sing Chair, Alpha Epsilon Pi · Arranged music and raised funds for Camp Kesem
- Philanthropy Chair, Alpha Epsilon Pi · Organized charity and service events
- Founder and Lead Mentor, CoderDojo Boca Raton · Taught children ages 7-17 to program