

OMKAR KULKARNI

✉ okulkarni@cmu.edu
🌐 okulkarni.com
☎ (703) 593-8761
📍 ovkulkarni

Education

Carnegie Mellon University Current
BS Computer Science 2022
Dean's List, High Honors

Thomas Jefferson High School for
Science and Technology

Skills

PROGRAMMING LANGUAGES

Python
Java
Javascript
C
C++
Golang
Standard ML

FRAMEWORKS AND TOOLS

Django
Ubuntu
Flask
Ansible
PostgreSQL
SaltStack
Node.js
HTML/CSS

Relevant Coursework

Fundamentals of Imperative Computation · 15-122 Grade: A	Fall 2019
Mathematical Foundations of Computer Science · 15-151 Grade: A	Fall 2019
Introduction to Computer Systems · 15-213	Spring 2020
Great Ideas in Theoretical Computer Science · 15-251	Spring 2020
Principles of Functional Programming · 15-150	Spring 2020

Employment

Carnegie Mellon University

Teaching Assistant - Financial Computing II (46-902)

Jan. 2020 to Current

- M.S. in Computational Finance class
- Class taught in C++ and covers data structures including linked lists, binary search tree, stack, queue, hash table, heap as well as classes, inheritance, virtual functions, polymorphism, constructors, destructors
- Graded homework, quizzes, and exams
- Held office hours to help with HW

Carnegie Mellon University Human Computer Interaction Institute

Research Assistant

Jan. 2020 to Current

- Working to secure the Internet of Things by creating a protocol to respect user privacy and security while maintaining ease of implementation by IoT Device creators
- Using a Raspberry Pi as a hub device that filters traffic to and from the outside world
- Working with a mobile app that interfaces with the Django API on the hub to control and restrict access at the device level

Yext

Software Engineering Intern

Tysons Corner, VA
July 2018 to Aug. 2018

- Worked on web development projects in HTML/CSS/Soy for clients including Sprint, Taco Bell, and Bloomingdale's
- Interfaced with project managers and design teams to make sure clients' expectations were met
- Upgraded the web template compilation tool written in Golang to generate valid ES6 Javascript

Projects

TJHSST Intranet (<https://github.com/tjcs/lon>)

Sept. 2016 to June 2019

- Worked as lead developer for the Intranet system (lon) written in Django
- Implemented a recommendation system for users
- Implemented a waitlist for users to sign up for high demand activities
- Added weekly/monthly calendar functionality
- Used by ~2000 students and staff

TJHSST Director Website Management (<https://github.com/tjcs/director>)

Jan. 2016 to June 2019

- Founder of Director Website Management Service
- Serves over 2000 websites in PHP, Node.js, and Django
- Used for teaching Web Development classes
- Connects web interface with server functionality
- Currently used in production at TJHSST

AI Grader (<https://ai.sites.tjhsst.edu>)

Dec. 2018 to June 2019

- Web application written in Django to help grade labs for the AI class at TJHSST
- Leverages celery to run the grader scripts in the background
- Provides a web editor with code completion and syntax highlighting
- Creates a queue so that there are not too many jobs running at once and allows for long-running jobs

Awards

PennApps XX - 3rd Place, Best Open Source Contribution, and Hacker's Choice Award

Sept. 2019

- Created ImpromPPTX, an automatic real-time presentation generator.
- Summarizes text, adds images and graphs, and has a mobile clicker for ease-of-use
- Code can be found at <https://github.com/arya-k/impromPPTX>.

VTHacks · 1st Overall

Feb. 2019

- Placed first overall at VTHacks 2019 as a team of high school students.
- Rendered hand drawn circuit diagrams for easy sharing using computer vision techniques.
- Code can be found at <https://github.com/ovkulkarni/vthacks19>

HooHacks · Best Education Hack

Mar. 2019

- Won the best educational hack at HooHacks 2019 by creating a website called Latticode
- Designed to teach students intermediate level coding through the creation of 2-D grid based board games.
- Games are rendered and playable online with friends in real-time.
- Code can be found at <https://github.com/ovkulkarni/latticode>.

Activities

CMU Sahara · Dancer

Sept. 2019 to Current

- Competed in national Bollywood Fusion dance competitions

Apex Buggy · Pusher

Sept. 2019 to Current

- Participate in CMU Sweepstakes competition
- Build small carbon fiber vehicles every year for races in spring
- Buggies are pushed uphill and free-roll downhill

Computer Security Club · Officer

Sept. 2017 to June 2019

- Developed web platform for problem submissions
- Organized and wrote problems for TJCTF 2016, 2018, and 2019, which were international competitions with over 2000 competitors
- Lectured about cybersecurity topics including web exploitation and cryptography

Student Systems Administrator · Lead Sysadmin

Sept. 2016 to June 2019

- Managed 50+ Linux Workstations and 30+ Linux Servers
- Experience working in a production environment
- Deployed servers using configuration management (Ansible, SaltStack)