

EDUCATION

Olin College of Engineering • Needham, MA

B.S. Engineering with Computing | GPA 4.0 | Dec 2023

- Recipient of Four-Year, Half-Tuition Merit Scholarship
- **Relevant Coursework:** Software Design, Quantitative Engineering Analysis, Modeling and Simulation of the Physical World
- **Activities:** Environmental Microbiology Researcher, Data Science Club, Public Interest Club

SKILLS

Languages: Python, Java, Javascript, HTML/CSS, MatLab, Bash

Frameworks: Amazon Web Services, Serverless Architecture, Docker, React.js, D3.js, Node.js, ROS, OpenCV, Scikit-learn

Other: Design Patterns, OOP, Git, CAD Software (Onshape | SolidWorks | Creo Parametric)

WORK EXPERIENCE

The MITRE Corporation • Bedford, MA

The MITRE Corporation manages federally funded research and development centers supporting several U.S. government agencies

Software Engineering Intern, Sep 2020 – Jan 2021

- Discovering new methods to exploit vulnerabilities in machine learning-based natural language processing systems
- Revived research code transitioned from academic lab, ran timing experiments to determine hardware needs and configuration for running resource-intensive computation with 4x more data, adapted code to run faster for our specific use-case
- Augmented dataset with 900 million segments of parallel text, implemented methods for scrubbing poorly aligned segments
- Used Logistic Regression for classification on an imbalanced dataset, improved performance with feature engineering

Software Engineering Intern, Jun 2019 – Aug 2019

- Worked for US Govt. IARPA-funded program to create an automated pipeline for evaluating privacy vulnerabilities in AI models
- Defined general gRPC interface for containerized attacks and defenses to be swapped easily during benchmark comparison tests
- Successfully improved the flexibility and speed of sending batches of images over gRPC from 17 minutes to 17 seconds

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Teaching Assistant for Software Design Class in Python, Sep 2020 – Dec 2020

- Taught Design Patterns, OOPs, debugging, and programming concepts during TA office hours; graded projects and assignments

Cumulus Digital Systems • Cambridge, MA

Cumulus Digital Systems is an IoT startup that delivers real time, paperless workflow management in maintenance and construction

Software Engineering Intern, May 2020 – Aug 2020

- Created webhooks system with AWS SNS, Lambda and DynamoDB to let clients access real-time updates on their data
- Developed secure REST API + Swagger UI microservice that allows clients to directly interface with Cumulus's system
- Improved REST API's maintainability by implementing response and request validation and automated documentation generation
- Implemented two React-Native features that decreased number of clicks required to make tool selections and see work summary

PROJECTS

Full-Stack React Web Application for Football Pool Management Sep 2020 – Feb 2020 • <https://www.lagaannfl.com>

- Deployed on AWS EC2; Build with React.js, TypeScript, Material-UI, Express.js, SQLite, Auth0, PM2, Nginx
- Built scoring engine to validate user pool picks and compute score; React UI to handle team selections and leaderboard displays
- Used by 40 users to submit pool selections weekly

Text Analysis and Data Visualization of Xkcd Transcripts Mar 2020 – May 2020 • <https://xkcd-data.herokuapp.com>

- Explored and analyzed methods for lemmatization, stemming, POS tagging, TF-IDF, truncated SVD, cosine-similarity, clustering
- Built data visualization tool using scikit-learn, nltk, SpaCy, Flask, D3.js, and bootstrap

ACHIEVEMENTS

Armed Forces Communication & Electronics Association (AFCEA) Jun 2019

- Chosen as highest ranking out of the top STEM students from 80 high schools in the Lexington-Concord area
- Received AFCEA scholarship, the Gilbert A. Barrett Award scholarship, and paid internship with the MITRE Corporation

Presented At

- TedxYouth | International Society of Technology in Education (ISTE) | Massachusetts Computer Using Educators (MassCUE) | Greater Boston Research Opportunities for Women (GROW) Technology Conferences

Valedictorian of Burlington Highschool Jun 2019