Matthew Kim

STUDENT AT THE UNIVERSITY OF PENNSYLVANIA

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Education

University of Pennsylvania   *Philadelphia, PA*

BSE IN COMPUTER SCIENCE, MINOR IN DATA SCIENCE | GPA: 3.89/4.0   *August 2018 - May 2022*

- **Relevant Coursework**: Mathematical Foundations of Computer Science, Data Structures and Algorithms, Scalable and Cloud Computing, Probability, Database and Information Systems, Algorithms, Software Design and Engineering

Experience

Mailgun Technologies, Inc.   *San Antonio, TX*

SOFTWARE ENGINEERING INTERN   *May 2020 - Aug. 2020*

- Developed and shipped new service to check if Mailgun is sending emails properly; sends PagerDuty alerts when lag develops between sending and receiving email
- Developed a new feature for an existing service to regularly parse through Mailgun's Cassandra tables and delete old data in a distributed manner
- Created custom Runscope notifications for Mailgun's API tests to be sent to Slack using AWS Lambda

University of Pennsylvania   *Phildelphia, PA*

TEACHING ASSISTANT   *Aug. 2019 - Dec. 2019*

- Teaching Assistant for CIT 593, Introduction to Computer Systems.
- Held weekly office hours to assist students in topics such as computer systems architecture, low-level programming, and programming in C; graded homeworks and exams.

University of Pennsylvania   *Philadelphia, PA*

DATA SCIENCE INTERN   *May 2019 - Aug. 2019*

- Conducted research in the Patel Group to better understand the hydrophobicity of proteins and protein-protein interfaces.
- Developed algorithm in Python using Scipy to cluster atoms in a protein by first binning atoms based on their susceptibility to dewetting and then traversing their nearest neighbors.
- Developed a machine learning model using neural networks with Pytorch to classify atoms that were predicted to be a part of a protein-protein interface as true or false positives; leveraged the HyperSearch API to optimize hyperparameters of model.

Skills

Languages	Java, Golang, JavaScript, Python
Web Development	React, Node.js, Express, EJS, jQuery
Databases & Deployment	AWS DynamoDB, MongoDB, Cassandra, SQL, MapReduce, Docker, Heroku
Miscellaneous	AWS Lambda, Selenium, Prometheus.io, Grafana

Projects

RCF Meets

- Built a Facebook Messenger chatbot to help members of my community meet new people.
- Polls users on a weekely basis if they are free to meet up with someone
- Algorithm randomly pairs users up with each other based on who users already know and who they've already met up with
- Chatbot engages with ~100 users a week - hosted on Heroku and built using Node, Express, React, EJS, and MongoDB

Uniqgo

- Built a Golang service to determine if Uniqlo has specific graphic t-shirts in stock
- Used the Selenium WebDriver to check for the existence of a specific element - if it exists, Uniqgo notifies me by sending me an email
- Ran a Selenium server and Uniqgo in Docker containers and deployed to an EC2 instance

PennBook

- Built a Facebook clone with two other students
- Wrote the algorithm to give users friend recommendations based on mutual interests, affiliations, and friends using Java and MapReduce
- Hosted on an EC2 instance and built using Node, Express, React, and AWS DynamoDB