

JACK CHAU

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EDUCATION

Tufts University

Bachelor of Science in Computer Science and Applied Mathematics

- Relevant coursework: *Computational Design, Data Structures, Algorithms, Cloud Computing, Software Engineering in Java, Urban Computing, Machine Structure and Assembly Language Programming, Distributed Systems, Machine Learning, Real Analysis 1*
- GPA: 3.8, Dean's List

Expected 2022

Medford, MA

EXPERIENCE

Software Engineering Intern

athenahealth, Inc. | API Security Development Team

- Optimize SQL queries to increase Permission API's performance and reduce latency by ~10%, allowing function calls to exceed 150 million calls per day (most called function at athenahealth)
- Engineer and implement a Dashboard to visualize Minimum Access Control Metrics and Elasticsearch Data, resulting in in-depth understanding of resource consumption across both development and production
- Conduct threat modeling for new products to identify vulnerability and enforce stricter security protocols
- Participate in Agile development and conduct code reviews to ensure correct compliance with PHI/HIPAA

Jun. 2020 – Present

Watertown, MA

Lead Software Engineer

Textbook Exchange Network | Browsing and Selling Team

- Streamline dataflow between front-end and back-end to allow scalability by rebuilding systems that handle textbook browsing
- Design algorithms to suggest textbook pricing using data from Google Books API and price-elasticity linear and non-linear models
- Facilitate code reviews between team members to ensure higher code quality

Dec. 2019 – Jun. 2020

Boston, MA

Research Fellow (Software Development)

Department of Urban and Environmental Studies - Funded

- Currently conduct research on how bikeshare programs can reveal segregation patterns across US major cities
- Design a suite of programs to compute spatial, temporal, and sentiment analysis, refining understanding of social media users' mobility
- Utilize MapReduce (Hadoop) and Spark to quantify and evaluate land use, financial flows, and growth near transit locations
- Optimize and monitor running code on Tufts High Performance Computing Cluster to prevent over-querying

Aug. 2019 – May. 2020

Medford, MA

Summer Intern

Lawrenceville School

- Develop MERGE, an interactive web app to help visualize classroom discussion and students' interactions
- Co-teach a class in Computer Programming for middle and high schoolers

Jun. 2019 – Aug. 2019

Princeton, NJ

PROJECTS

- **TextbookExchangeNetwork:** A platform for students to share and exchange textbooks across both the US and UK. Currently handling between 6,000-8,000 active transactions worth over \$100,000 (*Django, ReactJS, MySQL, Heroku, CircleCI*)
- **DiningTracker (Tufts Hackathon Medalist – Google Cloud Award):** A web-app that advises its user on dining options based on food availability. Currently implemented into Tufts Server (*Python, Google Cloud Platform, Google Datastore, RESTful APIs*)
- **UrbanismX (Published):** A proprietary platform that visualizes data of people's commuting habits in urban areas. Currently being implemented in a research project on urban planning (*Python, ReactJS, SQL, KeplerGL*)

SKILLS

- **Programming:** C, C++, Java, Python, JavaScript, Perl, SQL, Matlab
- **Web Development:** NodeJS, HTML, CSS, MongoDB, MySQL, cloud infrastructure (AWS, Hadoop, Hive)
- **Other:** Git, Perforce, Elasticsearch, TensorFlow, Unix, Unit Testing, High Performance Computing, Agile (Jira)

AWARDS & PUBLICATIONS

- **Shelby Davis UWC Scholar:** an annual scholarship toward student's high school and college tuition over an 8-year period
- **Tufts Summer Research Scholar:** funding for current research on bikeshare, mobility, and urban segregation at UrbanismX Lab
- **Lawrenceville Welles Grant:** funding for Greengrader, an annual science fair for orphanages in Vietnam founded in 2016
- **International Conference on Complex Systems:** presenting findings on sentiment analysis and spread of COVID-19 in NYC (July 2020)