

# 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*

- Engineer and implement a platform to visualize Minimum Access Control Metrics and Elasticsearch Data, resulting in in-depth understanding of access and resource consumption across both development and production
- Optimize SQL queries to increase Permission API's performance and reduce latency by 10%, allowing function calls to exceed 150 million calls per day
- 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 – Aug. 2020**

*Watertown, MA*

### Lead Software Engineer

*Textbook Exchange Network | Browsing and Selling Team*

- Streamline dataflow between front-end and back-end to improve scalability by rebuilding systems that handle textbook browsing
- Design and test algorithms for books' price recommendation, using data from historical transactions and Google Books API to refine price-elasticity linear and non-linear models
- Facilitate code reviews and provide support to team members to ensure higher code quality

**Dec. 2019 – Present**

*Boston, MA*

### Research Associate (Data Analyst)

*Department of Urban and Environmental Studies | Funded Researcher*

- Devise methods to examine the correlation between bikeshare programs and segregation patterns across US major cities
- Develop frameworks to define income brackets and analyze median income quotient, focusing on financial indicators to forecast segregation levels and intensity in tract-defined geolocations
- Implement and integrate a suite of distributed tools using Hadoop and Python to ingest over 500GB of financial and census datasets

**Aug. 2019 – Present**

*Medford, MA*

### Teaching Fellow 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:** recipient of 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)