JIMMY SHI

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Education & Skills

Johns Hopkins University, B.S. Computer Science, Applied Math & Statistics, GPA 3.81/4.0, Dean's List Aug 2018 - May 2022
Coursework: Data Structures, Intermediate Programming in C & C++, Automata and Computation Theory, Discrete Math, Calc III
Organizations: HopHacks Cohead of Design, JHU ICPC Competitive Programming Team

Competitive Coding:
- **Bloomberg CodeCon at JHU: 2nd Place Undergraduate**/31 grads and undergrads (4th Place overall) Nov 2018
- **ACM International Collegiate Programming Contest Mid-Atlantic Regional:** 20th /184 teams Nov 2018
- **USA Computing Olympiad:** Platinum Division Qualifier, **Top 10% of contestants** Jan 2017

Web Dev: Very Experienced: React, Redux, Saga, JavaScript/TypeScript, Jest, HTML, SCSS **Familiar:** Open Source, MaterialUI
Other: Experienced Java, Python, C#, Unity **Familiar:** Django, WebSocket, Bash, C, C++, Docker
Tools: Agile, Atlassian JIRA Confluence Crucible, Linux, Command Line, Git (branching and open source)
Design: Adobe Suite. Designed the Official JHU 2022 Class Banner & Class T-shirt given to 1,300+ Freshman.

Experience

Johns Hopkins Applied Physics Laboratory Air Missile Defense, Laurel MD May 2019 — Aug 2019
Software Engineer Intern <React, Redux, Redux-Saga, TypeScript, Jest, HTML, CSS, WebSocket, MaterialUI, Cesium, Docker/>
- Developed UI components using ReactJS and backend Redux-Saga data pipelines for a Department of Defense Integrated Air Missile Defense mission planner for Navy Warfighters
- Merged ~7,700 lines of robust code out of the ~25,000 lines coded by 4-5 active fulltime developers
- Wrote extensive end-to-end tests and integration tests for every feature to verify Redux store states after async calls
- Presented my work to senior leadership within the Air Missile Defense Sector

Semester.ly, Baltimore MD Jan 2019 — May 2019
Full Stack Software Engineer Intern <React, Redux, JS, Jest, Python, Django, HTML, SCSS, PostgreSQL, Linux, Open Source/>
- Introduced new features to the open-source course scheduling repo and helping deliver schedules to over 5,000 users
- Coded a data import flow using Django MVC framework, interfacing with JHU IT servers to verify thousands of schedules
- Helped other interns with frontend design using ReactJS and SCSS, pushing several visual enhancements to the repo

Princeton University, Troyanskaya Laboratory, Princeton NJ Jun 2017 — Aug 2017
Research Intern <Python, Multiprocessing for Computational Genomics, Bash, Linux/>
- Lead the intern team on research and development of a backend gene fold overrepresentation data analysis repository
- Designed a multiprocessing overhead mapping system, speeding up tests like single-thread PAGE by 5x using just 8 cores
- Wrote seven statistical algorithms and unit tests in 1,500 lines of robust, modular and well-documented code
- Presented findings to the Deputy Director of Genomics at the Simons Foundation in New York City

Activities

HopHacks Hackathon Organizer Team Dec 2018 - Present
Cohead of Design <React, MeteorJS, Linux, LESS, Adobe Photoshop & After Effects /> www.hophacks.com
- Co-designed the Spring 2019 and Fall 2019 website Frontends with over 15,500+ combined views
- I coordinate with the design and website teams helping deliver design materials for each Hackathon event

Jane Street 2019 SEE Program, 1 of 32 invitees May 2019
- Attended an all-expenses paid 3-day trip to Jane Street Headquarters in NYC learning about working on the trading floor
- Selected for my Blotto game entry, using simulations and psychology to rank ~40th/300 entries from fulltime employees

Awards

2016 National STEM Video Game Design Challenge Team Award ($3,000 prize), 1 of 18 winners from 3,000+ entries Oct 2016
2nd Place/35+ teams, Best Use of Google Cloud ($768), HopHacks Sept 2018
Assistive Tech Track, Best Use of AWS/10+ teams ($500), HackNYU Feb 2017
Best Mobile App/10+ teams ($200), HackMHS II May 2015

Projects

Frontend for AR- Charm City Murals, winner of the HopHacks 2nd Place award github.com/jshi22/Charm-City-Murals
Frontend rendering augmented reality machine learning output using Python, Flask, HTML and Heroku Winter 2019

Video Game- Radiant, winner of the National STEM Video Game Design award github.com/jshi22/Radiant
Developed at a Carnegie Mellon University game academy, 6,000 lines of C# code in the Unity Game Engine Summer 2016

Android App- Pirate Maps play.google.com/store/apps/details?id=com.CSI.HSSPirateMaps
Navigating buildings, implemented pathfinding using Djikstra's shortest path with backtracking written in C# Fall 2018

Jimmy Shi

Google STEP Essay Questions

1. How were you first introduced to Computer Science? How have you continued to develop your technical skills and seek additional exposure to the field?

I discovered Computer Science through web development in middle school. I absolutely love the challenge of designing impactful web applications. I spent a lot of time experimenting with JavaScript, HTML and CSS in elementary school.

In college, I learned ReactJS through offering to help build the new Women in Computer Science (WiCS) website. My first contribution involved making it easier for the President of WiCS to add new members to the "team" page through ReactJS code.

I love impacting the world through web development. I joined Semester.ly, a ReactJS course scheduling platform that helps serve over 5,000 students. I became familiar with open source, Redux and more complicated forms of web development.

Alongside web development, I was exposed to Backend Development during my experience at Semester.ly. To hone my technical skills in the Backend, I studied algorithms through competing in my university's Intercollegiate Programming Contest team. I was a part time Backend Intern at the Maryland Advanced Research Computing Center working on a Django administration portal for the Center's Director.

I will continue sharpening my Full Stack developer skills while maintaining my Frontend specialization.

2. What is your strongest programming language? How much experience do you have using the language? Go into detail about how you used this technical language. If talking about a group project, be specific about your role in the final product. (Examples can include projects, coursework, competitions, websites, previous internships, etc.)

As a designer, I've worked a lot with JavaScript, and in particular, JavaScript libraries like ReactJS through open source, websites and internships.

In my internship this summer at the Johns Hopkins Applied Physics Lab, I contributed over 7,700 lines of asynchronous JavaScript and Integration Test code to my User Interface Development team, amounting to over 30% of the code written by a team of 4-5 active fulltime developers.

I develop JavaScript websites like my personal site https://jimmyshi.com/ and my school's official Hackathon website frontend using MeteorJS and ReactJS; it's been viewed over 15,000 times and you can see it at https://hophacks.com/

Working at Semester.ly, I created a new feature that verifies thousands of schedules from official school servers using ReactJS code and the Django MVC framework.

I've presented all the work I've done with JavaScript in Semester.ly and the Applied Physics Lab to senior leadership within the Johns Hopkins IT department and the Missile Sector group at the Applied Physics Lab.

3. At Google, we believe that a diversity of perspectives, ideas, and cultures leads to the creation of better products and services. Tell us about your background and experiences and how they make you unique.

I'm an artist who has studied oil painting and sketching with Chinese painter Yong Zhou. My favorite hobby is sketching the faces of my friends and teaching them how to draw. I especially love Chinese watercolor paintings. My grandfather, a Calligrapher, would collaborate with me on watercolor paintings and put them up at art exhibitions celebrating Chinese culture and diversity.

My art experiences have influenced the way I approach problem-solving and frontend design. My art teacher used to say "make squares! Everything complicated can be simplified into tiny squares of color!"

Crafting beautiful front-facing products is my passion and I like teaching others about how to make design easier by "making squares". For example, at the Johns Hopkins Applied Physics Lab this summer, I worked with the Human Systems Engineering team to come up with a design system for the User Interface Development team to work with. I show them how frontend development was like building with tiny squares; each square was a tiny reusable CSS code snippet or user interface component. This helped accelerate their development progress significantly.

4. List the technical courses you will be taking next semester. If you have not registered for classes yet, please list the courses you plan on taking.

- Introduction to Algorithms
- User Interfaces and Mobile Applications
- Computer System Fundamentals
- Introduction to Statistics
- Computer Graphics

5. List any clubs and/or organizations that you participate in.

Cohead of Design, HopHacks Hackathon Organizer Team

- I coordinate with four designers to deliver a React website frontend, T-shirts and graphic design materials for a 300-person hackathon event biannually
- My website frontend was viewed over 15,000 times

Johns Hopkins University Intercollegiate Programming Team

- My team is ranked 20th/184 teams, I do most of the team's programming in Java
- We train in algorithm topics weekly from dynamic programming to graph questions