Jeffrey Tong

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Education

University of California, Berkeley **Berkeley, CA**
B.S., Electrical Engineering and Computer Sciences, 3.91/4.00 May 2025
Relevant Coursework: Data Structures & Algorithms, Databases, Machine Learning / Optimization, Operating Systems / Computer Architecture, Computer Security, Spring 2025: Signal Processing, Circuit Design
Activities & Societies: Eta Kappa Nu, IEEE (Student Member), California Informatics Competition (Officer)

Technical Skills

Languages: Python, Java, C/C++, JavaScript, HTML/CSS, SQL, Swift, LaTeX, Go, x86, Bash, MATLAB
Libraries: Node.js, Express.js, RedwoodJS, ReactJS, NumPy, SciPy
Other: Git, Heroku, Figma, Unix, Linux

Experience

Research Fellow, *National Institute of Drug Abuse*, Baltimore, MD Jun–Aug 2024
- Built SegBrain, a user-friendly GUI app in MATLAB as part of a workflow that performs 3D reconstruction of neurons and other objects from electron microscopy image volumes, now used by several researchers at NIDA
- Trained and performed inference with U-Net-based deep learning models to perform image segmentation
- Performance-engineered algorithms to reduce total time used by lab's reconstruction workflow from 1 week to 1 hr

Online Instructor, *iD Tech Camps*, Campbell, CA Jun–Aug 2023
- Taught a STEM camp, preparing and delivering lessons for 20+ students to help them build their project ideas
- Covered Python (with Pygame), Java, p5.js, animation / game design, and mobile app development

Software Engineering Intern, *Utopic.ai*, Remote May–Aug 2023
- Developed software for a Web3 startup rewarding user content interactions with crypto incentives
- Used RedwoodJS, a full-stack web framework incorporating ReactJS, GraphQL, and automated unit testing
- Prototyped and built entire company homepage, now used by hundreds of users daily, receiving positive feedback

Officer, Problem Writer, and Tester, *California Informatics Competition*, Berkeley, CA Sep 2022–Present
- Led semiannual educational algorithmic programming contest with 900+ participants across 39 countries per contest
- Rewrote backend testing infrastructure in Python to streamline data generation & reduced error rate by 17%

Founder and Lead Software Engineer, *Blairpath*, Silver Spring, MD Oct 2019–Present
- Prototyped and built website Blairpath.org, used by 100's of students and guests to navigate high school campus
- Shipped tools to view campus on interactive map, look up 200+ rooms across 3 floors, & compute shortest paths
- Used Express.js, HTML/CSS, and Node.js, then deployed on cloud servers with Heroku container

Data Analyst, *University of Maryland, College Park*, College Park, MD Jun–Jul 2019
- Wrote scripts to analyze Nat'l Weather Service data on 1.3M dust-related extreme weather events over 23 years
- Informed research on completeness and trends of data on injuries, fatalities, and property damage caused
- Helped publish paper in Bulletin of the American Meteorological Society

Founder and Lead Software Engineer, *DustWatch*, Columbia, MD Mar 2018–Aug 2021
- Designed and coded mobile app, DustWatch, in Swift with CRON job data server and published to App Store
- Supplied air quality forecasts as charts and push notifications to send early warnings for dust storms across US
- Led team of 6 to present at major nat'l/int'l scientific conferences (AGU Fall 2018, AMS 2019, NASA HAQAST5)

Publications

J. Tong, K. Liu, B. Tong, A. Xie, E. Nzokwe, and D. Zhang. DustWatch: Raising Public Awareness of Dust Storms with a Mobile Application. *99th American Meteorological Society Conf., Phoenix, AZ*, 2019.

Awards

American Invitational Mathematics Examination, 3x Qualifier Feb 2022
USA Computing Olympiad, Gold Division Dec 2020
American Meteorological Society Joint Satellite Conf., 3rd Place Best Student Presentation Award Jan 2019
NASA Conference Travel Award, $1,500 Dec 2018