Jimmy Zhang

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EDUCATION

Columbia University in the City of New York — New York, New York
Bachelor of Arts, Double Major in Computer Science and Cognitive Science — *Sep 2021 - May 2025*
- **GPA**: 4.06/4.00 (Dean's List)
- **Relevant Coursework**: Machine Learning, Artificial Intelligence, Advanced Programming, Data Structures in Java, Fundamentals of Computer Systems, Computational Linear Algebra, Discrete Mathematics, Calculus III
- **Activities and Societies**: Application Development Initiative (Committee), Columbia Undergraduate Science Journal (Editor-in-Chief), Columbia Science Review (Editor), Office of Disability Services (Note-Taker), Intramural Volleyball

EXPERIENCE

Microsoft + Nuance — Burlington, Massachusetts
Software Engineering Intern — *May 2023 - Present*
- Build a full-stack iOS application in Swift and SwiftUI showcasing the functionality of Dragon Ambient eXperience (DAX) Kit, delivered to third-party customers interested in integrating DAX's ambient AI technology into their own healthcare products.

Icahn School of Medicine at Mount Sinai — New York, New York
Research Assistant — *December 2019 - Present*
- Spearhead a team of 6 MDs, research scientists, and machine learning engineers in Professor Kuan-lin Huang's Computational Omics Lab and implement 4 different machine learning algorithms in Python to predict COVID-19 diagnosis, culminating in a first-author publication in Nature Scientific Reports.
- Leverage over 150,000 rows of longitudinal data taken from the largest Alzheimer's database in the US to predict mortality in dementia patients and identify the key clinical features associated with mortality across 8 dementia subtypes.

Memorial Sloan Kettering Cancer Center — New York, New York
Software Engineering Intern — *June 2022 - August 2022*
- Built a command-line interface tool, a scalable plugin system, and a code generator to automate access to MSK resources and code generation for thousands of developers across the Digital, Informatics & Technology Solutions (DigITs) division.
- Worked with 4 software and QA engineers on Team Polaris to design, build, and deploy a clinician-facing Connected Care Dashboard application, focusing on front-end development in React, CI/CD, unit testing, and E2E automation testing.
- Published blog posts and a whitepaper on live collaborative coding, administered UI enhancements, and facilitated automated deployment for Project Theano, an open-source project providing the foundation for web apps across MSK.
- Won a 40+ competitor hackathon proposing a plan for transforming the MSK caregiver experience to MSK leadership.

The Data Science Institute at Columbia University — New York, New York
Data Science Institute (DSI) Scholar — *September 2021 - August 2022*
- Selected by Dr. Daniel Freedberg to first-author a research paper identifying associations between specific antibiotics and risk for *C. difficile* infection, wielding a MarketScan database of over 40 million unique patient records.
- Utilized SAS software to preprocess, visualize, and analyze over 200 million antibiotic prescriptions from inpatient, outpatient, and pharmaceutical claims data spanning 12 years.

PROJECTS

- **DAXKit Showcase App** An iOS application enabling third-party users to produce and upload voice recordings to Microsoft Azure Blob Storage via the DAXKit SDK and verifying whether recordings were successfully uploaded. **Tech**: Swift, SwiftUI.
- **MSK CLI** A command-line interface tool with plugin and code generation functionality for internal use by developers at Memorial Sloan Kettering Cancer Center, reducing overhead time and costs for MSK projects. **Tech**: Typescript, Node.js, oclif.
- **HTTP Web Server from Scratch** An HTTP web server built in C, using socket programming to serve static HTML pages and dynamic pages queried from a database lookup server. Re-implemented as an Apache module. **Tech**: C, Apache, Linux.
- **College Email De-Spamifier** A Gmail Add-On that revamps high school students' inboxes, filtering college emails based on user-specified criteria (acceptance rate, tuition, etc.). **Tech**: Python (Django, BeautifulSoup), Google Apps Script, SQLite.
- **Personal Portfolio** A snapshot of my work, goals, and personal life. **Tech**: Javascript (React.js, Next.js), Tailwind CSS.

PUBLICATIONS

- **Zhang J**, Chen L, Gomez-Simmonds A, Yin MT, Freedberg DE. Antibiotic-Specific Risk for Community-Acquired *Clostridioides difficile* Infection in the United States from 2008 to 2020. *Antimicrobial Agents and Chemotherapy*, 66(12): e01129-22 (2022). https://doi.org/10.1128/aac.01129-22.
- **Zhang J**, Jun T, Frank J, Nirenberg S, Kovatch P, Huang KL. Prediction of individual COVID-19 diagnosis using baseline demographics and lab data. *Sci Rep* 11, 13913 (2021). https://doi.org/10.1038/s41598-021-93126-7
- **Zhang J**, Song L, Miller Z, Chan G, Huang, KL. Machine Learning Models Identify Predictive Features of Patient Mortality across Dementia Types. *In Revision.*

SKILLS

- **Languages**: (Fluent) English (**Working Proficiency**) Mandarin Chinese, Spanish
- **Technical Skills**: software development, research, machine learning, data structures and algorithms, writing, editing
- **Technical Languages**: Python, Javascript, Typescript, Swift, R, Java, HTML/CSS, C, SAS, LaTeX, SQL
- **Frameworks and Technologies**: Node.js, React.js, Next.js, SwiftUI, REST, Tailwind CSS, scikit-learn, pandas, tensorflow, matplotlib, numpy, tidyverse
- **Tools**: Git, GitHub Actions, Docker, Postman, Vim, Linux, Unix, Visual Studio Code, Xcode, RStudio, SAS Studio, Overleaf