

Yihan Shi

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Education

Duke University

Durham, NC

Bachelor of Science (cum laude); Major in Statistics with High Distinction

Aug 2019 – May 2023

- Honors Thesis: *Investigate the impact of Confounding Medical Interventions (CMI) in electronic health records (EHR) data*
- Dean's List in Fall 2021, Spring 2022, Fall 2022
- Genentech's Pharmaceutical Technical Development Outstanding Student Award (*awarded to one recipient per university*)
- Undergraduate Travel Award for the 13th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics

Experience

The Brookings Institution, Center on Health Policy

Washington, DC

Senior Research Assistant

Aug 2024 – Present

- Co-authored research papers and comment letters with economists and lawyers on the Inflation Reduction Act, pharmaceutical import security investigations, and health insurance price transparency
- Led the full intern hiring process from application review to final decision and provided mentorship and supervision to the 2 selected interns
- Built a data pipeline integrating historical FDA drug data with real-time updates and developed an interactive dashboard visualizing U.S. drug shortage trends

Mastercard Data & Services

Arlington, VA

Software Engineer

Aug 2023 – Aug 2024

- Led an innovative research project using artificial neural networks to predict counterfactual campaign outcomes
- Built full-stack web application features to serve enterprise customers such as McDonald's, Walmart, and BoA
- Partnered with product managers to revamp the application frontend to meet industry-leading accessibility and usability standards

Duke University, Department of Statistical Science

Durham, NC

Undergraduate Research Assistant

Aug 2021 – May 2023

- Co-authored an internal tutorial on recurrent event analysis examining alcohol-related complications after bariatric surgeries
- Investigated algorithmic bias of inappropriate proxy variables (e.g., race, gender, and ZIP Code) in Electronic Health Record data using simulation

Undergraduate Teaching Assistant

Aug 2022 – Dec 2022

- Held weekly office hours to help 70+ students understand statistics concepts and answer coding questions
- Guided 2 teams of students in the design of a data analysis project, which involved cleaning online datasets, generating hypotheses, and evaluating statistical models

Carta Healthcare

San Francisco, CA

Data Science Intern

May 2022 – Aug 2022

- Built a client-facing dashboard tracking 10 key hospital performance metrics and presented it in a live product demonstration
- Created a reusable template that enabled engineers to auto-generate webpages for the pre-training process in a machine learning workflow
- Implemented an automated data-cleaning pipeline that reduced bioinformaticians' housekeeping time by 30%
- Developed infrastructure that ran simulations of patient profiles 100x faster, reducing manual effort by 50%

Duke University School of Medicine*Summer Research Fellow***Durham, NC***May 2021 – Aug 2021*

- Co-led a team of 3 undergraduate and postdoc students to develop a rare disease genomic data science project
- Identified 20+ significant genes associated with a rare neurological disorder out of 35,000 using statistical methods
- Mentored 2 incoming first-year researchers and designed introductory biomedical data science projects

Activities and Leadership

Duke Technology Scholars Program*Vice President and Scholar***Durham, NC***Jan 2021 – May 2023*

- Managed 5 technology interest groups, such as Health-tech, Tech for Social Good, and Data Science, with 170+ students
- Recruited 9 small group leaders and guided them in planning events, launching social media campaigns, and effectively tracking goals
- Set agendas and created outreach worksheets as the organizer for 8 events in 2022, such as “Food for Thought” seminars, technical workshops, and lunch with industry professionals

Statistical Science Majors Union*Alumni Liaison Officer***Durham, NC***Aug 2020 – May 2022*

- Organized quarterly career panels and coffee chats to connect current students with Duke alumni
- Hosted advising sessions, mentorship programs, and networking events for pre-major students

Duke International Association*Vice President of Policy***Durham, NC***Oct 2019 – Aug 2022*

- Served as 1 of 3 students on the advisory board of the Duke International Alumni Committee and launched the Duke International Alumni Affinity Group as a platform for global connections
- Collaborated with Duke International Student Center, Counseling & Psychological Services, Visa Services, and Career Center to organize panels on topics such as international students’ well-being and Optional Practical Training (OPT)

Pea Rare Disease Initiative*Volunteer***Shanghai, China***Jul 2020 – Jan 2021*

- Analyzed FDA orphan drug approval data to inform patient families about trends in U.S. orphan drug development
- Produced quarterly social media newsletters to raise awareness of rare diseases in China

Publications

- Wosińska, M. E., & Shi, Y. (2025). *US drug supply chain exposure to China*. Brookings.
- Frank, R. G., & Shi, Y. (2025). *Cumulative net earnings of drugs selected or likely to be selected for negotiation*. Brookings.
- Biswas, D. D., Shi, Y., El Haddad, L. et al. (2024). *Respiratory neuropathology in spinocerebellar ataxia type 7*. JCI Insight, 9(18).
- Roger, A. L., Biswas, D. D., Huston, M. L., ..., Shi, Y. et al. (2024). *Respiratory characterization of a humanized Duchenne muscular dystrophy mouse model*. Respiratory Physiology & Neurobiology, 326, 104282.
- Biswas, D. D., Strickland, L. M., Dhindsa, J. S., Shi, Y. et al. (2022). *Accumulation of pathological Ataxin-7 in the medulla leads to hypoglossal (XII) Motor Unit Pathology*. The FASEB Journal, 36(S1).

Skills and Interests

- **Languages:** Mandarin Chinese (native), Japanese (intermediate)
- **Technical Skills:** Python, R, Assembly, SQL, C#, C, Java, JavaScript, CSS, HTML, \LaTeX
- **Interests:** Photography, Piano, Pilates