Louis Zhao

Email: tz2529@columbia.edu
Portfolio: https://tianqizhao.com
Mobile: 781-609-8066
LinkedIn: https://www.linkedin.com/in/louistz/

EDUCATION

Columbia University in the City of New York — New York, NY

- *Master of Science in Biomedical Engineering, Specialization: Neuro Engineering* — *Expected Dec 2024*
- *Bachelor of Science in Computer Science; GPA: 3.74* — *Sep 2021 – May 2023*

Relevant Coursework: *Artificial Intelligence, Computer Vision, Natural Language Processing, Databases, User Interface Design, Human-Centered Design and Innovation, and Web App Development*

- **Brandeis University** — Waltham, MA
  Bachelor of Arts in Computer Science — *Aug 2018 – May 2021*

EXPERIENCE

- **Mortimer B. Zuckerman Mind Brain and Behavior Institute at Columbia University** — New York, NY
  Biomedical Research Assistant, supervised by Professor Tom Maniatis and Dr. Erin Flaherty — *Sep 2023 – Present*
  - **Workflow Automation**: Improve bio-imaging analysis efficiency by 95% by automating computationally demanding tasks using Python, resulting in a significant reduction in analysis time.
  - **Dry Lab Research**: Advance understanding of neurological developmental disorders by using statistical and machine learning techniques to correlate genetic variants with protocadherin protein variants, setting the foundation for future in-depth research.
  - **Wet Lab Research**: Accomplish a 15% increase in experimental throughput by investigating the impact of gene deletion on cell adhesion, employing DNA cloning and gel electrophoresis techniques.
- **Research Computing Services Lab at Columbia University** — New York, NY
  Research Assistant, supervised by Professor Junfeng Yang and Dr. Yaniv David — *Jan 2023 – May 2023*
  - **Computational Research and Open Source Contributions**: Strengthened the Python Upgradvisor research project by implementing two graph visualizations and four feature updates, helping open-source communities on GitHub to update package dependencies, which resulted in the delivery of comprehensive reports to three GitHub projects.
  - **Data Analysis and Automation**: Reduced manual effort by 90% by automating and optimizing data processing in Python, transforming system output into insightful and human-readable tables.
- **echo3D** — New York, NY
  Software Engineering Intern — *May 2022 – Aug 2022*
  - **Web Development**: Improved rendering speed by 30% and reduced data storage by 70% by developing a web-based augmented reality game for company promotions using JavaScript and Python.
  - **iOS Development**: Enhanced interactivity in educational applications for pharmaceutical and biotechnological research by building an iOS augmented reality app that allows exploration of neuroscience models, using Unity, C#, and the echo3D API.
- **Changing Room** — New York, NY
  Software Engineering Intern — *May 2022 – Aug 2022*
  - **Front-end Chrome Extension**: Achieved a 40% improvement in extension loading time by deploying user-friendly technologies like Svelte framework, JavaScript, and Python. Additionally, implemented 5+ new user-centric features, such as displaying overall ratings and recommendations on unsupported brand websites.
  - **Back-end Web Development**: Reduced computing time and resources by 30% and added 10+ new features with minimized errors and bugs and improved code maintainability, developing the website using Python, JavaScript, and PostgreSQL.

LEADERSHIP & PROJECTS

- **Columbia Engineering Graduate Student Council**: Department Representative of Biomedical Engineering and Member of the Budget Committee.
- **Paws and Tails**: Led a team of 3 to launch a web platform connecting pet breeders to potential customers, resulting in 1000+ user activities and an average engagement time of 5 minutes within the first three months.

SKILLS

- **Programming Languages**: Python, Java, SQL, HTML/CSS/Javascript (Web Development), Ruby, C
- **Technical Skills**: Dry Lab Data Analysis, Wet Lab Research, Database Management, Project Management, Microsoft Office