Miaoya Zhong

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EDUCATION

Stanford University, Stanford, CA — *Expected 06/ 2027*
Master of Science in Computer Science — Current GPA:**4.12/4.0**
Relevant Courses: Artificial Intelligence: Principles and Techniques, Deep Learning, Design and Analysis of Algorithms, Computer Organization and Systems

Harvard University, Cambridge, MA — *05/2022*
Master of Education in Learning Design, Innovation, and Technology — GPA:**4.0/4.0**

University of Wisconsin-Madison, Madison, WI — *12/2020*
Bachelor of Science in Elementary Education-Early Childhood & ESL — GPA:**3.93/4.0**

TECHNICAL PROJECTS

Research Project - Tactile Sensing for OceanOneK Underwater Robot — *06/2024 - 10/2024*
Advisor: *Mark Cutkosky, Stanford Biomimetics & Dexterous Manipulation Lab*

- Designed a **Fiber-Bragg-Grating sensor** for the OceanOneK robot's hands to enhance tactile sensing.
- Collected and processed experimental data using force–torque sensors and optical interrogators.
- Implemented **a fully connected neural network (2 layers, 64 neurons each, ReLU activation)** to predict force and contact status, with **PyTorch** and data preprocessing (normalization, filtering). Achieved **MSE = 0.15, R^2 = 0.98** with 80/20 train–test split and nearly identical training/validation loss (0.0521 / 0.0522).
- Assisted in developing a **whisker-inspired tactile sensor** for underwater perception, showcased at the **Stanford Robotics Center Launch**.

Project - Student Revision Behavior Analysis **(Bronze Award, Top 2% in class)** — *05/2024*

- Designed and implemented statistical models (**bootstrap hypothesis testing, correlation analysis, Poisson/Geometric distributions**) to analyze revision patterns from 40 students' projects.
- Built and evaluated **Naive Bayes classifiers** to predict project preferences, achieving up to 100% test accuracy on certain datasets, utilizing Python (NumPy, pandas, scikit-learn) for **data preprocessing, probabilistic modeling, and visualization.**
- Published a research-style paper and reproducible code on GitHub, demonstrating strong data analysis and machine learning skills.

WORK EXPERIENCE

Computer Science Teacher — *08/2023 - 05/2025*
The Quarry Lane School, Dublin, CA

- Designed customized AP Computer Science Principles (AP CSP) and Middle School Computer Science curricula using Python, Java, HTML, and CSS, resulting in a significant increase in the AP CSP class average score from **3.62/5 to 4.21/5** (2024 California average: 3.08, global average: 2.90).

Elementary STEM Teacher — *09/2019-07/2021, 06/2022-06/2023*
Stanford Madera Groove Children Center, TCTM Kids IT Education Inc, Various Elementary Schools

- Taught **robotic programming** with Scratch, Lego Mindstorms, Lego WeDo 2.0, and Python
- Utilized classroom materials to implement STEM activities and maintained communication with parents

PUBLICATION

Li, H.*, Xing, C.*, Khan, S., **Zhong, M.**, & Cutkosky, M. R. (2025). Whisker-Inspired Tactile Sensing: A Sim2Real Approach for Precise Underwater Contact Tracking. *IEEE Robotics and Automation Letters(RA-L)*

SKILLS

- **Programing:** Python, C++, C, Java, JavaScript, Processing, R, HTML/CSS
- **Frameworks & Tools:** NumPy, pandas, PyTorch, Onshape CAD, CorelDRAW, Casting, Adobe Photoshop
- **Languages:** Mandarin (Native), English (Proficient), Cantonese (Intermediate)