ZHIYU SUN

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EDUCATION

Columbia University   New York, NY
Master of Science in Biomedical Engineering   Sep 2024 – Dec 2025
Course: Brain Computer Interface, Deep Learning in Biomedical Imaging, 3D UI And Augmented Reality

Shandong First Medical University   Taian, CN
Bachelor of Engineering in Biomedical Engineering   Sep 2020 – Jun 2024,
Course: Advanced Mathematics, Linear Algebra, Probability Theory, Electrical Engineering, Signal and System

PROJECTS

Optimized CNN-Mamba Hybrid Model for 3D Medical Segmentation   New York, NY
Developer   May 2025 – Jul 2025
- Optimized training efficiency of a CNN-Mamba hybrid model for 3D MRI segmentation by eliminating software bottlenecks and maximizing hardware utilization.
- Implemented CPU-side data preloading and rewrote Dice Score computation to significantly reduce GPU-memory overhead and runtime latency.
- Reduced training time by 75% while preserving Dice Score accuracy of 0.988.

Automated Financial Reporting System   New York, NY
Developer   May 2025 – Jun 2025
- Built a financial reporting platform that embedded interactive Power BI reports using REST APIs.
- Automated data handling by loading and filtering Excel data through an Access database, with in-app table generation.
- Integrated DeepSeek-V3 to analyze filtered financial data and generate AI-driven reports, outputting results directly into PowerPoint slides.

Cognitive Task Migration from Python to C# in Unity   New York, NY
Developer   Dec 2024 – Jan 2025
- Enabled cognitive experiments integrating both EEG and eye-tracking data collection with a VR headset.
- Designed a page manager to control activation and transition between 3 main tasks, ensuring seamless navigation and user experience.
- Implemented prefabs and containers to optimize object reusability and regulate object lifespans effectively.

Cognitive Task Design in Python   New York, NY
Developer   Aug 2024 – Oct 2024
- Designed a memory task presenting image stimuli and recording behavioral responses using PsychoPy.
- Integrated the task and real-time EEG recording into LSL for synchronized data acquisition.

EXPERIENCE

Shanghai Microport Medbot (Group) Co., Ltd.   Shanghai, CN
Operations Intern   Jun 2023 – Sep 2023
- Managed 4 exhibitions, analyzing clinical requirements and peer feedback, resulting in 2 enhancement plans.
- Improved inventory management efficiency by 50% by developing and implementing a hierarchical sorting structure based on 5 core parameters.
- Collaborated with team to elevate professional appearance of 10 critical documents through proofreading, improving spelling, grammar, and layout.

World Robot Conference   Shanghai, CN
Volunteer   Aug 2023 – Sep 2023
- Educated 50+ visitors daily on robotic technologies, boosting public awareness.
- Promoted company products to hospital directors, securing 13 key contacts for future collaboration.

SKILLS

- Coding: Python, MATLAB, C#, C++, C, R
- Libraries: TensorFlow, Pandas, PsychoPy, Simulink, Qt
- Software: Unity, VS Code, GitHub, SolidWorks, Power BI