Xu Zhang

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EDUCATION

New York University New York, NY

The Master in Computer Science : GPA: 3.67 *September 2024 – May 2026*

The University of Texas at Austin Austin, TX

B.S. in Mathematics (with honor): GPA: 3.95 • 75th Annual Natural Sciences College Scholars (2023) *January 2021 – May 2024*

KEYWORDS: Multimodal Learning, Vision-Language Model, Embodied Learning

SKILLS

Programming Languages: C, UNIX/Bash, Python, Java, MATLAB.

Machine Learning: Pytorch, Hugging Face, Scikit-learn, Numpy, Pandas, R.

Other: LaTeX, Diamond Sutra, I Ching, Windmill, Thomas Flare, Bowtie2, PCR reactions.

RELATED COURSES TAKEN

MACHINE LEARNING, PREDICTIVE ANALYTICS, MATH STATISTICS, REAL ANALYSIS I&II, NUMERICAL ANALYSIS

RELATED PROJECTS

Reimplemented MViT, YOLOv6 with few-shot learning, Prototypical Network, Alexnet

RESEARCH&INTERNSHIP EXPERIENCE

Capgemini Automobile Manufacturer LLM-based Market Analysis Pipeline Shanghai, China

AI Engineering Assistant (NLP) *June 2024 – August 2024*

- Co-developed a FastAPI server for hosting fine-tuned LLMs to extract key insights from market opinion on car parts in the client's products.
- Led the experiments on evaluating how vLLM enhances models' performance (including Qwen, Chatglm, etc.) and manages multi-thread requests through experiments on the FastAPI server we developed.
- Discovered and verified the crucial observation that using vLLM will result in outputs different from original models given fixed parameters due to vLLM's different implementation of attention kernel.

Gene Expression Study in Binge-like Alcohol-Drinking Mice Across Brain Regions Austin, TX

Research Assistant (Supervised by Professor Dhivya Arasappan) *February 2023–June 2024*

- Conducted concordance and discordance analyses to identify genes with closely aligned expression levels across multiple brain regions.
- Executed pathway analysis to identify responsible pathways for differentially expressed concordant genes and those with closely aligned expression levels in multiple brain regions.
- Presented the work at Heart of Texas Research Conference.

CONFERENCES & EVENTS

Heart of Texas Undergraduate Research Conference

Presenter *April 20, 2024*

- Presented our research on cross-brain-regions gene expression profiling in binge-drinking mice (High Drinking in the Dark line).
- Demonstrated a novel statistical method I developed to identify genes with similar expression patterns across brain regions and mouse lines by utilizing concordant pairs and a novel notion of distance.
- Presented a way to use permutation importance to select the most influential features from machine learning models for sample group prediction tasks, in order to proceed with further biological analysis.