Baiyan Li

Computer Science
BSc Computer Science (Joint Programme)
Beijing Jiaotong University & Lancaster University (Year 2)

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Research Interests

I am broadly interested in generative models for interactive visual media, especially games and animation. I aim to develop and adapt LLM-based architectures for controllable content creation and real-time interaction in game environments.

Education

•Beijing Jiaotong University & Lancaster University *2024.09 – Present*
BSc in Computer Science (Joint Programme) GPA: 3.71 / 4.0

Research Experience

•Concept-Based Dictionary Learning for Inference-Time Safety in VLA Models *2025.01 – Present*
Core Experimental Contributor Beijing / Lancaster

- Contributed to experiments for a paper currently under submission to CVPR on concept-dictionary safety defenses in VLA models.
- Maintain and extend PyTorch experimental pipeline for concept-dictionary learning and activation-space defences.
- Run large-scale experiments and ablations; ensure cross-environment reproducibility via strict logging and configuration.
- Curate multilingual datasets and design evaluation settings for safety under adversarial or out-of-distribution prompts.

•Independent Study: Medical Image Analysis *2025*
Developer & Competitor (Kaggle RSNA Aneurysm Detection) Remote

- Achieved top 15% among 1000+ teams on intracranial aneurysm detection task.
- Implemented custom 3D/DICOM data loaders and preprocessing pipeline in PyTorch to handle class imbalance and noise.

Personal Projects

•AI-Powered Real-Time Lighting Control (AI-FOR-LIGHT) *2025*
Research prototype integrating deep models into real-time 3D environments PyTorch, Unreal Engine (C++ / Blueprints)

- Prototype system for automatic scene lighting control using learned policies in a real-time engine.

•LLM-based Social Media Content Generator *2025*
Idea-to-post pipeline using large language models Python, LLM APIs

- Implements prompt-engineered generation and simple post-processing for structured, style-controlled outputs.

Research Skills

Programming: C/C++; Python (PyTorch, NumPy); basic Java.
Deeplearning: Model training and evaluation; dataset preprocessing; ablation studies; experiment logging and reproducibility.
Tools: Git, Linux, Docker (basic), LaTeX, VS Code / CLion, Kaggle & Colab.
Mathematics: Calculus, linear algebra, probability and basic statistics (course + self-study).
Relevant Coursework: C / C++ Programming, Object-Oriented Programming, Data Structures & Algorithms (self-study), basic ML (MIT 6.S191, Stanford CS231n materials).

Selected Achievements

•Bronze Medal, Weihai Municipal University Students Programming Contest
•Top 15%, Kaggle RSNA Intracranial Aneurysm Detection