Zhuoyang Zou

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Education

Pennsylvania State University **Sep. 2024 – Present**
PhD in Computer Science, PI: Prof. Wenpeng Yin *University Park, PA*

Northwestern University **Sep. 2022 – Dec. 2023**
Master of Science in Artificial Intelligence *Evanston, IL*

The Chinese University of Hong Kong **Sep. 2017 – May 2022**
Bachelor of Science in Computer Science *Hong Kong*

Work Experience

Pennsylvania State University **Sep. 2024 – Present**
Researcher - LLM Multi-Agent Systems *University Park, PA*

- Developed a **multi-agent LLM system** designed to identify weaknesses in research papers across NLP, computer vision, and medical AI domains.
- Implemented a pipeline where multiple **autonomous AI agents** interact, critique, and generate counterarguments to refine research quality.
- Integrated **GPT-4, Llama, and Claude** models to simulate peer review processes and enhance research reproducibility.

Pennsylvania State University **Sep. 2024 – Present**
Teaching Assistant, Department of Computer Science *University Park, PA*

- Led recitations for **CMPSC/DS 442 Artificial Intelligence** courses, assisting 100+ students with AI models and Python implementations.
- Designed programming assignments on **PyTorch**, and **Scikit-learn**, improving hands-on learning.

High Fashion Group **May 2024 – Aug. 2024**
AI Specialist *Hong Kong*

- Developed a **fabric image recognition system** using **Siamese networks** for pattern matching and quality control.
- Built a **text-based fabric search engine** using LLMs to enhance product database search.

Northwestern Medicine **Jul. 2023 – May. 2024**
Research Technologist *Chicago, IL*

- Designed **iTox**, a CNN-RNN deep learning model predicting pneumonitis risk from CT scans (**AUC: 0.84**).
- Developed Grad-CAM-based visualization tools to identify lung regions most predictive of pneumonitis.
- Proposed a novel **iTox metric** to guide radiation dose recommendations, reducing pneumonitis risk by 20%.

KARMO International Company Ltd. **Jun. 2022 – May 2023**
Artificial Intelligence Developer *Hong Kong*

- Implemented **YOLOv5&8** for real-time safety gear detection in construction sites, increasing compliance.
- Developed a **TensorFlow-based** model for autonomous vehicle object detection at Hong Kong Science Park.
- Built a Django web application to optimize data collection for Hong Kong Drainage Services Department.

Publications

Z. Zou, P.T. Teo, A. Yalamanchili, M. Abazeed. **Optimizing Deep Learning Models: CNN-RNN Augmentation with Grad-CAM Analysis for Predicting Pneumonitis from Pre-Treatment CT Images**. *International Journal of Radiation Oncology, Biology, Physics*, 2024. [Link]

Yusen Zhang, Wenliang Zheng, **Zhuoyang Zou**, et al. **HRScene: How Far Are VLMs from Effective High-Resolution Image Understanding?** *ICCV 2025 Conference Submission.*

Renze Lou, Hanzi Xu, **Zhuoyang Zou**, et al. **AAAR-1.0: Assessing AI's Potential to Assist Research**. *ICML 2025 Conference Submission.* Workshop Best Paper Award.