Chunzhuang Wu

ChunzWu@gmail.com • 130-5030-5737

EDUCATION

Northeastern University 09/2023 – Present
Bachelor of Artificial Intelligence
GPA: 3.91/5.00 · Rank: 5/58 (Top ~8.6%)
Core courses: Advanced Mathematics (90), Probability Theory and Mathematical Statistics (92), Data Analysis and Visualization (100), Numerical Analysis (87), C++ Programming (91), Linear Algebra (94)

RESEARCH EXPERIENCE

Key Laboratory of Artificial Intelligence, MoE 04/2025 – 08/2025
Research Assistant, Supervised by Yao Liu

- **Topic**: Prompt-Guided Multimodal Retinal Analysis — systematically integrated Vision-Language Models (VLMs) with CNN-based pipelines to enhance retinal vessel segmentation and disease classification.
- **Responsibilities**: Designed a three-stage framework: (1) developed diagnostic prompting (Prompts 1–3) for VLM-based disease screening; (2) integrated VLM-derived semantic embeddings into UNet via an attention fusion module for multimodal vessel segmentation; (3) built a multi-branch classifier combining fundus images, segmentation masks, and textual embeddings for final diagnosis.
- **Achievements**: Achieved **+3.4% Dice** and **+9.5% disease classification accuracy** on four public retinal datasets; attention fusion notably improved vessel boundary precision under low-contrast conditions. **First-author** paper submitted to MMM 2026 (CCF-C).

PROJECT

Mathematical Contest in Modeling 02/2025
Lead Modeler & Programmer

- **Topic:** Analyzed global cybercrime distribution and optimized cybersecurity policies for the 2025 MCM F Problem using data-driven and hybrid mathematical modeling approaches.
- **Responsibilities:** Built an end-to-end modeling pipeline using **Spearman correlation**, **principal component analysis (PCA)**, **ridge regression**, and related methods. Collected, cleaned, and integrated data from authoritative online sources; designed evaluation metrics; produced part of the visualizations; and contributed to drafting sections of the report.
- **Achievements:** Built a **Policy Effectiveness Index** with $\mathbf{R^2}$ = **0.977** and **F-test** = **105.18**, demonstrating strong predictive accuracy; ranked **Meritorious Winner (Top ~7% worldwide)** among thousands of teams.

HONORS

National Scholarship(<3%) 10/2024

Northeastern University First-Class Scholarship(<3%) 10/2024

Outstanding Student of Northeastern University(<5%) 11/2024

Mathematical Contest in Modeling, Meritorious Winner 05/2025

Network Technology Challenge, Provincial Third Prize 07/2025

SKILLS

Programming languages: C++, Python

Others: CET-4, CET-6, Linux, Git, PyTorch, LaTex, Makrdown, Docker