Chenjia Li

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Education

Johns Hopkins university — Baltimore, MD
Master of Science in Engineering in Computer Science; GPA: 3.64/4.0 — *Aug. 2024 – Present*

Boston University — Boston, MA
Master of Science in Computing and Data Science; GPA: 3.48/4.0 — *Sep. 2023 – May 2024*

Rutgers University — New Brunswick, NJ
Bachelor Degree with Computer Science, Statistics, and Mathematics Major; GPA: 3.449/4.0 — *Sep. 2019 – May 2023*

Professional Experience

3Clear — Jun. 2023 – Jul. 2023
Algorithm Development Intern — *Nanjing, China*

- Preprocessed LSM-simulated pollutant data using a wind-rose algorithm that reconstructs the wind field (Monin-Obukhov, Wiener) to derive statistics and transform coordinates for emission interpolation.
- Replicated a published Bayesian inference method for point-source gas emission estimation, developing a Python-based mobile sensing framework adapted to our task for robust and low-uncertainty estimates.

Research Experience

Graduate Research Assistant — Sep 2024 – Present
Arcade Lab at Johns Hopkins University, Advised by Prof. Mathias Unberath — *Baltimore, MD*

- Co-authored ICCV2025 paper; developed a digital twin-based video segmentation system that improves region similarity and contour accuracy by 36% over baseline reasoning segmentation methods (e.g., LISA, GSVA, V*).
- Co-authored MICCAI2025 paper; extended ICCV work to operating room applications, boosting IoU, CIoU, and GIoU by 33% in fine-tuning and zero-shot settings vs. baseline models (e.g., V*, LISA).
- Working on a survey paper reviewing reasoning segmentation tasks, evaluation metrics, and existing methods, with a comparative analysis of their mathematical foundations and performance.
- Preparing a NeurIPS submission; extending the ICCV reasoning segmentation system for automatic annotation and applications in VQA, summarization, and grounding.

Undergraduate Research Assistant — Jan. 2023 – May 2023
Art and AI Laboratory at Rutgers University, advised by Prof. Ahmed Elgammal — *New Brunswick, NJ*

- Attended regular seminars with professors and PhD students to discuss cutting-edge generative models and their mathematical foundations, including GANs, DDPM, and DDIM.
- Independently fine-tuned a Stable Diffusion model using CLIP guidance and LoRA, achieving text-driven target region replacement.

Undegraduate Independent Study — Aug. 2022 – Dec. 2022
Rutgers University, advised by Prof. Michael Luvalle — *New Brunswick, NJ*

- Implemented text preprocessing pipelines for Shakespeare's plays and movie review datasets incorporating tokenization, normalization, and noise reduction to enhance data quality for downstream NLP tasks.
- Implemented a GloVe-based neural net achieving 83% accuracy in movie review sentiment classification, and applied word similarity analysis to identify characters and dialogues driving tragic endings in 10 Shakespeare plays.

Competition Experience

Kaggle - AI Mathematical Olympiad - Progress Prize 2 | *PyTorch, Deepscaler, verl* — January 2025 – Present

- Participated in an AI mathematical reasoning competition, collaborating with the team to review deepseek-R1. Applied GRPO fine-tuning to the DeepSeek-R1-Distill 7B and 14B models, and employed prompt ensemble, majority voting, and hyperparameter. tuning—raising the correct solutions on a 50-question set to 24.

Technical Skills

Technical Skills: Python, R, Matlab, Java, C, SAS, Excel, LaTeX, Tableau
Language: Mandarin(Native), English(Proficient), Japanese(Working Proficiency)