Minghan Lyu

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EDUCATION

SHANDONG University (SDU), Jinan, China **Sep2023 - Now**

B.S. in School of Software, GPA: 3.45/5.0, got an IELTS score of 7 in my freshman year of college.

Related courses: Numerical Computing (92), Information Retrieval (92), Linear Algebra (91), Computer Organization and Architecture (90), Introduction to the Artificial Intelligence Major (95), Social Networks and Recommender Systems (90)

RESEARCH EXPERIENCE

Eukaryotic Gene Structure Prediction with HMM

Advisor: Jun Wang (Professor) | Homepage: https://scholar.google.com/citations?hl=en&user=A95MOjcAAAAJ

- Problem: Gene boundaries are hard to infer from raw sequences.
- Approach: Preprocessed FASTA/GFF3 into aligned labels and inputs.
- Approach: Trained a multi-state HMM and decoded standardized outputs.
- Impact: Used nucleotide/exon evaluation to guide iterations.

Multimodal Understanding for Product Live-stream

Advisor: Lei Meng (Professor) | Homepage: https://scholar.google.com/citations?hl=en&user=KuukGGkAAAAJ

- Problem: Live-stream content is noisy for product matching.
- Approach: Aligned video and text data into unified training pairs.
- Approach: Mined hard negatives to sharpen fine-grained matching.
- Impact: Enhanced retrieval quality and fusion stability.

Traffic Forecasting on METR-LA

Advisor: Yongshun Gong (Professor) | Homepage: https://scholar.google.com/citations?hl=en&user=WIHqungAAAAJ

- Problem: Multi-step traffic prediction is hard under dynamics.
- Approach: Built an end-to-end spatiotemporal forecasting pipeline.
- Approach: Captured spatial dependencies with graph-based modeling.
- Impact: Reduced forecast error and improved robustness.

Brand-Geographic Grid Prediction

Advisor: Meng Chen (Associate Professor) | Homepage: https://scholar.google.com/citations?hl=zh-CN&user=xE4gacoAAAAJ

- Problem: Site selection needs reliable geographic grid prediction.

- Approach: Transformed trajectories into grid-aligned samples.
- Approach: Combined rule-based baselines with learned predictors.
- Impact: Improved accuracy with interpretable outputs.

News Recommendation with NPA

Advisor: Li Lian (Associate Professor) | Homepage: https://faculty.sdu.edu.cn/lianli/

- Problem: Users face information overload in news feeds.
- Approach: Modeled reading history and candidate impressions.
- Approach: Trained a neural ranking system with controlled sampling.
- Impact: Delivered stable personalized ranking improvements.

LLM-based Paper Screening

Advisor: Yuqing Sun (Professor) | Homepage: https://scholar.google.com/citations?hl=zh-CN&user=4CVXyOkAAAAJ

- Problem: Meta-analysis screening is slow and inconsistent.
- Approach: Designed structured prompts for inclusion criteria.
- Approach: Used an LLM to classify titles and abstracts at scale.
- Impact: Improved screening efficiency with reliable decisions.

AWARDS AND HONORS

- 2024 Mathematical Modeling National Contest, Problem C, Provincial First Prize(10%)
- 2025 Mathematical Modeling National Contest, Problem C, Provincial First Prize(8%)
- Innovation Research Specialty Scholarship, 2024-2025 Academic Year

SKILLS AND OTHERS

Programming language: C/C++, Python, Java, MySQL, MATLAB , LaTex ,R

Framework & Tools: PyTorch, Github, TensorFlow, Java IDE, Spring Web, Thymeleaf, Hugging Face, ROS, Ubuntu, Anaconda, BLAST, MEME Suite, Rstudio