

# 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), Bioinformatics computing (93)

## RESEARCH EXPERIENCE

### Eukaryotic Gene Structure Prediction with HMM

Oct2025-Jan2026

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

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

### Multimodal Understanding for Product Live-stream

Sep2025-Dec2025

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

- Live-stream content is noisy for product matching.
- Aligned video and text data into unified training pairs.
- Mined hard negatives to sharpen fine-grained matching. Use CLIP to process images then use AdaBoost to fuse image and text information
- Enhanced retrieval quality and fusion stability.

### Traffic Forecasting on METR-LA

Seq2025-Dec2025

Advisor: Yongshun Gong (Professor) | Homepage:

<https://scholar.google.com/citations?hl=en&user=WIHqungAAAAJ>

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

### Brand-Geographic Grid Prediction

Mar2025-Jul2025

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

- Site selection needs reliable geographic grid prediction.
- Transformed trajectories into grid-aligned samples.
- Combined rule-based baselines with learned predictors.
- Improved accuracy with interpretable outputs.

## **News Recommendation with NPA**

**Jan2025-Jun2025**

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

- Users face information overload in news feeds.
- Modeled reading history and candidate impressions.
- Trained a neural ranking system with controlled sampling. Introduced the Bert model to encode the text information of the titles and abstracts of users' historical news.
- Delivered stable personalized ranking improvements.

## **LLM-based Paper Screening**

**Nov2024-Dec2024**

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

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

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## **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

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## **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