Yilin Li

Transgender Female | 2113840@mail.nankai.edu.cn | github.com/AsanoHaruka157 | asanoharuka157.github.io

Education

School of Mathematical Sciences, Nankai University Nankai District, Tianjin
Bachelor's of Science, Mathematics *Sep 2021 — Jun 2025*

- **Excellent courses**: Data Mining(93), Functional Analysis (87), Operating System and Network(91), GPU Programming(90), Signal and Systems(90), Data Structure and Algoritms(94), Numerical Approximating (91), Mathematical Modeling(92)

Competences

- **Programming Languages**: Python(PyTorch, Pandas), C++/NVCC, MATLAB, Linux
- **Mathematics**: Numerical PDEs, Optimization, Functional Analysis

Language Proficiency

- **English (TOEFL)**: Reading: 29, Listening: 29, Speaking: 22, Writing: 22

Research Interest

- Data Analysis, Machine Learning, High Performance Computing/ML Systems, Federated Learning
- Bioinformatics/Biostats, Al for Med, Applied Math

Research Experience

Research with Associate Professor Wenrui Hao(Penn State University), Neural Network Modeling of Alzheimer's Disease Dynamics Jan 2025 — Current

- Neural ODE modeling for Alzhemer's Disease biomarkers
- Transfer learning and sensitivity analysis for constructing personalized models
- Uncertainty Quantification, Parameters clustering and AD stage identification

Research Intern at HKUST(GZ) with Assistant Professor Zecheng Gan, Tensor Neural Networks and Acceleration Algorithms Fen 2025 - June 2025

- Developing Tensor Neural Networks to solve high-dimensional partial differential equations (PDEs)
- Mathematically derive algorithms for Convolutional Tensor Neural Networks(CTNNs) with coupled input dimensions
- Applying Deep Galerkin/Ritz Methods for Numerical PDEs
- Profiling and Accelerating training process

Research Assistant at HKUST(GZ) with Dr.Cuiping Pan's group, ODE Models for Autoimmune and Cardiovascular Diseases and In-silico Perturebation for Drug Discovery Oct 2025 — Current

- Developing ODE Models for IgG4-RD and coronary heart disease
- In-silico perturbation for therapy and drug effect simulation

Research with Dr. Ziyang Song(University of Ohio) and Prof. Yue Li(McGill University), scTimelyGPT: Extrapolatable Transformer Pre-training for Single-cell Transcriptomics Time-Series Forecasting and Foundation ModelOct 2025 — Current

- Developing TimelyGPT Models and conducting experiments for Single-Cell Transcriptomics time series data interpolation and extrapolation
- Comparing scTimelyGPT model with generative models such as scNODE

Projects

Open-Problems---Multimodal-Single-Cell-Integration 2025

- Feature Engineering
- Building high-dimensional regression and prediction models
- Github Repository

Honors and Awards

S Prize in Mathematical Contest in Modeling (MCM) 2024, COMAP 2024

Outstanding Student Union Cadre Sep 2023

First Class High School Scholarship Feb 2021

Outstanding Teenager in Beilin District Jun 2019

Extracurricular Activities

Administrative assistant at the Department of Physical Education, Nankai University Sept 2023 - Jan 2025

Student cadre at the School of Mathematical Sciences, Nankai University Sept 2021 - Aug 2024

Social worker(volunteer) at Zhangwanying Subdistrict Office Feb 2024

Extracurricular activity mentor(volunteer) at Nankai University Affiliated Primary School Feb 2024