

Xuan Yang

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EDUCATION

Southern University of Science and Technology, China

Sept 2021 - Present

B.S. Computer Science and Engineering (Honored Turing Class)

GPA: 3.82/4.0

- Curriculum:

- Mathematics: Calculus, Linear Algebra, Discrete Mathematics, Probability and Statistics
- Computer Science: JAVA Program Design, Principle of Database Systems, C/C++ Program Design, Data Structures and Algorithm Analysis, Computer Organization, Artificial Intelligence, Operating Systems, Machine Learning, Computer Networks, Object-oriented Analysis and Design

University of Illinois Urbana-Champaign, US

Jun 2024 - Oct 2024

Intern Student Supervised by Bo Li, Secure Learning Lab

National University of Singapore, Singapore

Jul 2023 - Aug 2023

Summer Workshop

Performance: B+

- Curriculum: Real-Time Graphics Rendering

PUBLICATIONS

Jiawei Zhang, **Xuan Yang**, Taiqi Wang, Yu Yao, Aleksandr Petiushko, Bo Li. SafeAuto: Knowledge-Enhanced Safe Autonomous Driving With Multi-modal Foundation Models. ICLR 2025 (under review).

RESEARCH EXPERIENCES

Knowledge-Enhanced Autonomous Driving System

Jun 2024 - Oct 2024

Research Assistant, Secure Learning Lab, UIUC

Advised by Prof. Bo Li

- Parsed driving safety regulations into first order logic rules and then explicitly encoded these rules into a probabilistic graphical model (PGM).
- Leveraged the PGM to verify and correct the high-level actions suggested by the MLLM.

Red Teaming and Capability Testing for Speech-To-Speech Models

Aug 2024 - Oct 2024

Research Assistant, VirtueAI

Advised by Prof. Bo Li & Ph.D. Yi Zeng (VT)

- Evaluate the model's ability to recognize the number of participants and distinguish between different speakers during conversations.
- Test if the faster interactions enabled by speech-to-speech models allow for rapid prompt injection of harmful in-context demonstrations, leading to risky and harmful outputs.

Human Trajectory Reconstruction

Aug 2023 - Mar 2024

Research Assistant, School of Urban Planning and Design, Peking University

Advised by Prof. Haoran Zhang

- Developed a transformer autoencoder model based on NVAE to mine the latent features of mobility trajectories.
- Reconstructed low-quality mobility data based on latent feature vectors with KD-Tree search.
- Conducted experiments on real-world datasets to analyze the statistical similarities of reconstructed data.

COURSE PROJECTS

Traffic-Sign Detection and Recognition

Dec 2023 - Jan 2024

Developer, Southern University of Science and Technology

Supervised by Prof. Qi Hao

- Improved the performance of Yolov8 in the recognition of traffic signs.
- Improved the recognition accuracy by 2% through HSV and MSER augmentation.

AI-based Analysis of Sustech Lecture Poster Authorship

Sept 2023 - Dec 2023

Developer, Southern University of Science and Technology

Supervised by Prof. Jiang Liu

- Crawled and recognized poster text with paddleOCR, and leveraged ChatGPT API to generate poster abstracts.
- Built user interfaces and visualized analysis results.

HTTP File Manager

Nov 2023 - Dec 2023

Developer, Southern University of Science and Technology

Supervised by Prof. Ming Tang

- Construct a simple file manager server in Python based on characteristics of HTTP/1.1 that has ability to serve several clients with legitimate permissions to view, download, upload, delete files.

SUSTech Graduate Student Dormitory Selection System

Sept 2023 - Jan 2024

Front-end developer, Southern University of Science and Technology

Supervised by Prof. Yuqun Zhang

- Developed a website to satisfy dormitory choosing based on Vue3, JPA, and Axios; deployed on Sustech server.

Real-Time 3D Graphics Rendering

Developer, National University of Singapore

Jul 2023 - Aug 2023

Supervised by Prof. LOW Kok Lim

- Implemented the Whitted Ray Tracing algorithm based on Shadertoy GLSL and deployed it on Shadertoy.

Standardized Test

TOEFL iBT 102 (R26, L27, S23, W26)

TOEFL MyBest Scores 104 (R28, L27, S23, W26)

SKILLS

Programmings Python, Java, C/C++, Markdown, LaTeX, HTML/CSS/JavaScript

Frameworks PyTorch, Scikit-Learn, PostgreSQL, Vue

Tools GitHub, VS Code, JetBrains, Apifox

HONORS&AWARDS

2023 **Finalist**, 2023 Interdisciplinary Contest In Modeling

Shenzhen, China

2023 **Gold Medal Winner**, The 1st Sustech Student Cluster Competition

Shenzhen, China

2023 **Third Prize**, 2023 Merit Student Scholarship of Southern University of Science and Technology

Shenzhen, China

2022 **First Prize**, 2022 China Mathematical Contest in Modeling, Guangdong Province

Shenzhen, China

2022 **Second Prize**, 2022 Merit Student Scholarship of Southern University of Science and Technology

Shenzhen, China

2021 **Principal's Special Award**, 2021 Freshman Student Scholarship of Sustech

Shenzhen, China