Shengxiang Lin

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Education

Xi'an Jiaotong University 2022.09 - present
Computer Science and Technology Experimental Class (Qian Xuesen Honor Science) *Xi'an, Shaanxi, China*

- **GPA:** 4.06/4.30 (93.33/100) **Rank:** 2/41
- **Relevant Coursework:** Programming Fundamentals (A+), University Physics II (A+), Linear Algebra and Geometry (A+), Mathematical Analysis for Engineering (A+), Introduction of Computer Science and Technology (A+), Data Structure and Algorithms A (Honor) (A), Assembly Language (A+), etc

University of California, Berkeley 2024.08 - 2024.12
UCBX Concurrent International *Berkeley, CA, United States*

- **GPA:** 3.75/4.00
- **Relevant Coursework:**Great Ideas of Computer Architecture (Machine Structures) (A) , Operating Systems and System Programming (A-), Introduction to the Internet: Architecture and Protocols (B+), Introduction to Artificial Intelligence (A), etc

Achievements

Second Award, Blue Bridge Cup National Finals C/C++ Programming University Group A	2025.06
Silver Award, Top 44/392 teams, The 2025 ICPC China Nanchang National Invitational Programming Contest	2025.05
Glod Award, Top 13/151 teams, The 2025 ICPC China Shaanxi Provincial Programming Contest	2025.05
First Award (100 points, ranking in the Top 1 nationwide) , Programming Ability Test (PAT) Advanced Level	2025.03
Huawei Scholarship (Xi'an Jiaotong University, 10 awardees annually, including 3 undergraduates)	2024.11
First Award, China Undergraduate Mathematical Contest in Modeling (CUMCM) Shaanxi Region	2024.09
Outstanding League members, Xi'an Jiaotong University	2024.05
Personal Second Prize, Group Programming Ladder Tournament (GPLT) National Finals	2024.04
400 points, ranking in the top 0.66% nationwide,Certified Software Professional	2024.03
Outstanding students, Xi'an Jiaotong University	2023.12
National Scholarship, Ministry of Education of the People's Republic of China	2023.12
Silver Award, The 2022 ICPC Asia Xi'an Regional Contest	2023.05

Publications(* indicates equal contribution)

Lightweight DL Framework for Accurate Particle Flow Energy Reconstruction 2024
Yu Wang*, Yangguang Zhang*,Shengxiang Lin*, Xingyi Zhang*, Han Zhang Submitted to Nucl. Instrum. Meth. A

Research Experience

Luo Lab Undergraduate Division (LUD) 2025.01 - present
Under the supervision of Prof. Minnan Luo *Xi'an, China*

- Proficient in common methods and models in natural language processing, dedicated to research on frontier directions such as intelligent agents and multimodality.
- Intelligent Dialogue System Development: Engineered a Rust-based high-concurrency intelligent dialogue system with secure distributed architecture. Designed RESTful APIs for LLM integration, connected multimodal LLMs (Deepseek, Doubao) via LLOneBot middleware, and developed core modules (request routing, state management) enabling end-to-end chatbot deployment.

Innovative Talents Science Training Program (ITSTP) 2024.07 - 2024.09
Under the supervision of Prof. Gunther Roland *Shanghai, China*

- A machine learning-based image reconstruction framework addresses multichannel sparse features under extreme conditions (high particle multiplicity, overlapping shower energy). A hybrid loss function that integrates weighted MSE and SSIM balances pixel-level precision with structural fidelity, overcoming the limitations of classical particle flow algorithms in resolution, efficiency, and accuracy.

- Neural networks combining 3D convolutional layers, Squeeze-and-Excitation attention, and offset self-attention modules captures cross-modal spatial correlations and nonlinear energy deposition patterns, with feasibility systematically explored for particle flow image processing.
- A lightweight 90k-parameter model optimized via dynamic weight allocation matches 5M-parameter baseline performance with enhanced computational efficiency. Open-source code supports reproducibility and extensions.

Projects

Integrated Management and Intelligent Service Platform for Book Sales 2025.05 - 2025.06

Under the supervision of Prof. Xuebin Ren *Xi'an,China*

- Implement a Douban book data scraping module to collect over 100,000+ book entries and 200,000+ user records, storing this data in a PostgreSQL relational database engineered to 3NF. The system features a Flask-RESTful server that integrates Deepseek-V3's large model API and employs a hybrid recommendation algorithm. The functionality includes the admin panel for book CRUD operations and inventory dashboards, plus the User Portal with categorized search, shopping cart transactions, hybrid algorithm-powered recommendations, and AI-driven Q&A.

Design and Development in Operating Systems 2024.09 - 2024.12

Under the supervision of Prof. Ion Stoica *Berkeley,USA*

- Build a shell, similar to the one used by bash on a virtual machine.
- Implement a fault-tolerant MapReduce system using Rust. Tasks are assigned to worker processes through a coordinator process. Handle worker failures by implementing heartbeats and task redistribution.
- Complete OS development with Pintos, implement modules such as User Programs, Threads, File Systems, etc.

Simulation and prediction of Pacman's behavior under different scenarios 2024.09 - 2024.12

Under the supervision of Prof. Pieter Abbeel *Berkeley,USA*

- Build general search algorithms and apply them to Pacman scenarios.
- Design agents for the classic version of Pacman.Implement both minimax and expectimax search and evaluation function design.
- Implement value iteration and Q-learning. Then apply them to a simulated robot controller (Crawler) and Pacman.
- Using Bayesian networks and factoring, the implementation progresses from localizing a single stationary ghost to hunting swarms of multiple moving ghosts with ruthless efficiency.

Design and Development of Computer Architecture 2024.09 - 2024.11

Under the supervision of Prof. Dan Garcia *Berkeley,USA*

- Creating a playable snake game in C Programming Language.
- A simple machine learning algorithm for classifying handwritten digits is implemented using RISC-V assembly code.
- Design a skeleton CPU which contains basic elements like ALU, Register File, and expand CPU to support more instructions and pipelining.
- Implementing and optimizing 2D convolution.

Simulation Implementation of Internet Protocol 2024.09 - 2024.10

Under the supervision of Prof. Rob Shakir *Berkeley,USA*

- Implement and enhance existing traceroute implementations to handle various errors that may occur in the network.
- Implementing a distance vector routing protocol.

2D Game Design and Development 2024.03 - 2024.04

Under the supervision of Prof. Kelvin Sung *Xi'an, China*

- A 2D modeling of the campus map was carried out in the form of a team, and the campus terrain was accurately digitized. Based on the profound historical and cultural heritage of the school, creative design and technological implementation were integrated to create a campus themed situational drama 2D interactive game - "Paranormal-XJTU".

Skills

Programming Skills: C/C++, C#, Python, PyTorch, Rust
Language Skills: Mandarin (native), English (TOEFL 94, CET-4 623)

Social Engagements

Member: of Berkeley TechFounders' Technology Department 2024-2025
Minister: of XJTU Computer Science and Technology Experimental Class-Mentor-Group 2023-present
Member: at Xi'an Jiaotong University Campus Ambassador Social Practice 2023-2024
Officer: at Qian Xuesen College Academic Tutoring Center Office 2023-2024
Officer: at Chung Ying College Study Committee 2022-2023