Xin Liang

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EDUCATION

Tongji University   Shanghai, China
Bachelor of Engineering in Software Engineering, GPA: 90/100   *Sep. 2021 – July. 2025*
- **Main Courses:** Linear Algebra, Advanced Mathematics, Probability and Statistics, Discrete Maths, Advanced Language Programming Practice, Data Structure, Algorithm, Operating System, Principles of Database and Applications, Computer Organization, User Interface Interaction, Principles of Compilers, Computer Architecture, Introduction to Artificial Intelligence, Speech Recognition,Introduction to Computer Vision, Software Engineering

Hong Kong University of Science and Technology   Hong Kong, China
Visiting Student   *July 2023 – Aug. 2023*
Tongji University   Shanghai, China
Freshman in Architecture and Urban Planning   *Sep. 2020 – Sep. 2021*
- **Main Courses:** Introduction to Architecture, Field Trip of Art Modeling, Art Modeling, Introduction of Design, Fundamentals of Design, Foundations of digital design

EXPERIENCE

Software Developer Engineer   Jan. 2023 – Current
MIT City Science Lab   *REMOTE*
- Developed and deployed a custom token named SCRBT on Sepolia testnet, involving smart contract creation in Solidity, deployment using Truffle, and interaction/verification via MetaMask.
- Developed and optimized modular **smart contracts** using Solidity and deployed ABDK Libraries to enhance computational capabilities, overcoming the limitations of floating-point operations in Solidity.
- Conducted extensive research into Decentralized Application (DApp) development, using tools like Hardhat to streamline smart contract interactions with front-end and back-end systems, contributing to the lab's innovative block-chain solutions.
- Collaborated with a multidisciplinary team, staying updated with the latest blockchain trends, and contributed to publishing academic findings

Research Intern   Sep. 2017 – Aug. 2020
NaMI-Tongji Lab   *Shanghai, China*
- Prepared a patent for a pioneering differentiable neural architecture search method based on Zeroth-Order approximation, showcased in ICASSP 2023 Poster Session, demonstrating a significant contribution to the field of automated machine learning.
- Implemented an automatic machine learning method that notably reduced the time required to identify optimal neural network architectures, streamlining the development process and enhancing overall operational efficiency.
- Ensured the accuracy and reliability of the final neural architectures, validating the method's effectiveness in maintaining high performance standards while accelerating the architecture search process.

PROJECTS

CLGAN-based Black-Box Adversarial Sample Generation Study | *Pytorch*   Dec. 2023 – Current
- Led a pioneering study on the susceptibility of Deep Neural Networks (DNNs) to adversarial attacks using CLGAN (Critic-Leading Generative Adversarial Network), aiming to understand and mitigate the impact of undetectable perturbations on model performance and reliability.
- Developed the novel CLGAN model utilizing Python and Pytorch, demonstrating its effectiveness in generating adversarial samples that compromise black-box DNN models, significantly outperforming existing methods in evasion rate and efficiency.
- Conducted extensive evaluations of CLGAN against other adversarial sample generation methods, utilizing statistical analysis to quantify performance degradation and showcase superior results in terms of evasion rate and sample efficiency.

ETH Beijing Hackathon 2023 | *Blockchain, Web Development*   Apr. 2023 – Apr. 2023
- Developed FactLENS, a decentralized news validation ecosystem. This included a user-friendly browser plugin and a comprehensive website, featuring advanced functionalities like user-contributed ratings and consensus mechanisms for truth verification.

- Worked collaboratively in a team to design, prototype, and present the FactLENS project, demonstrating effective use of agile methodologies

JourneyCam | *SwiftUI, Unity*   May 2023 – Sep. 2023
- Developed JourneyCam, a VR-Assisted Photography Teaching iOS App, which earned the Second Prize at the 2023 Mobile App Innovation Competition.
- Led a team through the design and development phases, ensuring a user-friendly interface and engaging experience. Utilized Swift and VR technologies to provide immersive, interactive photography tutorials, featuring customizable virtual scenarios and real-time feedback.

Honors & Awards

2023 Mobile App Innovation Competition Second Prize   Sep. 2023
National Association for Computer Education in Colleges and Universities

Second Prize of Asia Pacific Cup Mathematical Modeling   May 2023
APMCM Organizing Committee

Third Prize of Shanghai National University Student Mathematical Modeling   Nov. 2022
Shanghai Municipal Education Commission

"Internet+" Innovation and Entrepreneurship Competition Bronze Award   Sep. 2022
Tongji University

Publications

FARPLS: Eliciting Preference Feedback for Robot Trajectories from Human Users   2023
*Hanfang Lyu, Yuanchen Bai, **Xin LIANG**, Xiaojuan Ma, etc. .Submitted to IUI 2024,accepted.*

AI Agent as Urban Planner: Steering Stakeholder Dynamics in Urban Planning   2023
via Consensus-based Multi-Agent Reinforcement Learning
ANONYMOUS AUTHOR(S), in preparation

Patent:Differentiable Neural Network Architecture Search Method Based on   2023
Zeroth-Order Approximation
*Lunchen Xie, **Xin LIANG**, Kaiyu Huang,Tongji University*

Towards Open-Set Surgical Activity Recognition in Robot-assisted Surgery   2023
ANONYMOUS AUTHOR(S), in preparation

Technical Skills

Languages: Java, Python, C/C++, SQL, JavaScript, HTML/CSS, R
Frameworks: React, Node.js, Flask, FastAPI
Developer Tools: Git, Docker, Google Cloud Platform, VS Code, Visual Studio, PyCharm
Libraries: pandas, NumPy, Matplotlib