

JINGYU LIU

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EDUCATION

Concordia University, Montreal, Canada

09/2024 – 05/2026(expected)

Master of Applied Computer Science

Harbin Institute of Technology(HIT), Shenzhen, China

09/2019 – 06/2023

Bachelor of Engineering in Computer Science and Technology

- Average score: 87.923/100 (90.661/100 in last 2 years).
- IELTS: 7.5 (8.5/L, 8.5/R, 6.0/S, 6.5/W)

SKILLS

- **Distributed Consensus:** Deep understanding on various consensus algorithms in distributed system, from traditional crash fault tolerance algorithms, permissioned BFT protocols, to permissionless consensus protocols (Nakamoto, Casper-FFG, etc.).
- **Blockchain:** Mastering Bitcoin, scaling solutions and its ecosystem, familiar with different L1s and L2s. Deep understanding in mainstream defi protocol mechanisms (MakerDAI, Compound, Uniswap, etc.).
- **Cryptography:** Experienced in cryptography algorithms and tools related with blockchain. Taken course ZKP MOOC, familiar with ZK proving systems like *KZG-PLONK* and corresponding frameworks(Circom, Zokrates, Arkwork).
- **Basics:** Solid background on operating system, network and database. Accomplished all [MIT6.824 labs](#), familiar with p2p network algorithms like Chord, Kademlia, etc. Multiple experiences on PyTorch framework.
- **Programming Language:** Not limited to any specific language, experienced in Rust/Golang/C/Solidity.

PUBLICATIONS/PREPRINTS

Jingyu Liu, Yang Zhao, Xinrui Xiao, and Jie Liu. 2023. [CAS: Crop Aerial Sensing Simulation in Smart Farming](#) In the 2023 20th Annual IEEE International Conference on Sensing, Communication, and Networking (**SECON'23**), Workshop on Sensing, Communication and Networking for Smart Agriculture (AgriSECON 2023), September 11–14, 2023, Madrid, Spain.

Jingyu Liu, Xinrui Xiao, Yang Zhao, and Jie Liu. 2022. [Demo Abstract: Containerized Mobile Sensing Simulation Framework for Smart Agriculture](#). In the 20th ACM Conference on Embedded Networked Sensor Systems (**SenSys'22**), November 6–9, 2022, Boston, MA, USA. ACM, New York, NY, USA, 2 pages.

RESEARCH AND INTERNSHIP EXPERIENCE

International Research Institute for Artificial Intelligence

Harbin Institute of Technology, Shenzhen, China

06/2022 – 06/2023

Undergraduate Research Assistant | Advisor: [Prof. Yang Zhao](#)

- Developed a containerized mobile sensing simulation (CMOS) [framework](#) for smart agriculture applications as the main contributor. The CMOS framework was an out-of-the-box framework for deploying unmanned vehicle simulation and generating synthetic datasets specified in agriculture domain. I implemented it based on ROS(Robot Operating System), integrating Blender, Gazebo simulator, mavlink and PX4 autopilots in Docker.
- Generated a large-scale synthetic image dataset of cornfield based on the framework presented above, which were used for training deep learning models on the corn leaf image segmentation problem. Our segmentation model beats the SOTA segmentation model SAM with extremely lower model size on corn leaf segmentation.

Software and Emerging Technologies Lab

Polytechnique Montréal, Montreal, Canada

07/2022 – 10/2022

Research Intern | Advisor: *Prof. Mohammad Hamdaqa*

- Built a multi-level **ontology** of residential lease agreements by analysing all standard residential lease forms provided by local governments over Canada using Protégé.
- Analysed the multi-layer ontology of leases using Giancarlo Guizzardi's **approach** in four different dimensions.
- Based on the ontology above, developed a set of domain-specific language(DSL) **tools** on JetBrains MPS, including two domain-specific languages: AliceGen and AliceVerify, which were used to formalize and verify leases written in natural language, which will be converted to Smart Contract.

SELECTED PROJECTS

RBTC

Bitcoin-like SegWit UTXO blockchain node and wallet in Rust, implementing P2WPKH payment.

5-pipeline CPU in RISC-V

A 5 stage pipeline CPU in Verilog on miniRV-1 instruction set with dynamic branch prediction, running at a high clock speed of 152Mhz on FPGA.

NetNote

*A Markdown note application written in C++, implementing the **zettalkasten note-taking method** based on Qt.*

MISCELLANEOUS

- Blog: <https://vieloooo.github.io/>
- Building something interesting integrating Lightning Network, EVM and ZkP.