

# Shangren Lu

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## Education

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### The University of Melbourne

Melbourne, Australia July 2025 – Present

Bachelor of Science

- Majoring in Mathematics and Statistics.

## Leadership & Service

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### UoM Maths Seminar

github.com/UoM-Maths-Seminar 2025 – Present

Maintainer

- Maintain collaborative LaTeX notes for student-run pure maths reading groups; currently hosting Algebraic Geometry seminar (S1 2026).

## Work Experience

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### Infrastructure-as-a-Service Provider

Remote 2021 – 2024

Technical Support Consultant

- Provided technical support for networking and system architecture design, debugging, and infrastructure problem-solving.

## Projects

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### ShitDefinedNetwork

Autonomous System AS151192 & AS199684 Feb 2023 – June 2024

Independent Researcher

- Designed and operated a network of over 100 nodes (5 Gbps capacity) with BGP peering, IPv6 routing, and telemetry.
- Developed custom networking software with latency & jitter based routing algorithm.

### CuPerf

github.com/EEddeenn/CuPerf 2025 – Present

Developer

- C++23 CLI tool for NVIDIA GPU benchmarking (memory, compute, tensor cores) with extensible architecture and JSON/CSV output.

### Rhizome

github.com/EEddeenn/Rhizome 2025 – Present

Developer

- Static knowledge system (Next.js, MDX, Tailwind) with wiki-links, backlinks, graph view, and full-text search.

## Skills

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**Programming Languages** | Rust, C, C++, Python, Shell Scripting, Rocq, Lean4

**Web Development** | React, Next.js, Tailwind CSS

**Networking** | IPv6, BGP, Wi-Fi, Switching, SDN, DPU

**Hardware** | FPGA, RISC-V, SDR

**Systems & Cloud Platforms** | Linux, Git, CI/CD, AWS, Azure, Cloudflare

## Research Interests

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- Category theory and type theory
- Microarchitecture (memory, cache, branch prediction)
- Networking (routing protocols and policy)
- High performance computing (high-speed interconnects, offloading)
- Software defined radio (signal intelligence)