Hello
I'm Nghia Tran

RUUSULANKATU 5 405, HELSINKI, 00260
(+358) 46 638 8167
NGHIABIGTRAN@GMAIL.COM

Summary

Master's student in Computer Science at Aalto University specializing in high-performance systems and cloud infrastructure. Proven track record in developing **scalable C++ algorithms**, **automated CI/CD pipelines**, and **temporal network simulations**. Strong background in **Platform Security** and **Distributed Systems**, with a passion for optimizing the intersection of hardware and software in telecommunications R&D.

Experience

JUNE 2025 - SEPTEMBER 2025

FPT software, Hanoi – *Artificial Intelligence Agent Platform Intern*

- Create and maintain AI Chatbots on an internal corporation platform.
- Handling API and **MCP** server alongside Testing and Quality control for **AI Agents**.
- Familiarizing myself with scenarios that happen commonly in a corporation context.

Education

SEPTEMBER 2021 - JUNE 2024

Aalto University, Helsinki – *Bachelor in Digital systems and Design*

Graduated with honor, 4.13 GPA. I have acquired teamworking, programming, **devops**, software development, algorithm, quality control, and microcontroller programming in **C/C++**. These skills are further improved by my current pursuit of the master's degree.

SEPTEMBER 2024 - DECEMBER 2026 (expected)

Aalto University, Helsinki – *Master in Computer Science, Algorithms focus, Complex Systems minor*

The major enables me to write low-level programs, utilizing parallel instructions and saving memory at a CPU-core level at a master's level. The minor helps me visualize and handle complex systems such as **Distributed Systems** and **Cloud Infrastructure** much more efficiently and accurately.

Projects

DECEMBER 2024

GitLab CI/CD Build Pipeline Automation | *GitLab, Docker, YAML*

- Designed and implemented an automated **CI/CD pipeline** using **GitLab CI** to streamline the build and testing phases of a software project.
- Configured pipeline stages including **Build, Test, and Deploy**, ensuring code quality through automated unit testing and linting.
- Utilized **Docker** for environment consistency across different pipeline stages, matching modern DevOps industry standards.

- Managed version control and collaborative development workflows using **Git**, achieving a high degree of automation for iterative software releases.

MAY 2025

High-Performance Algorithm Engineering | *C++, CUDA, OpenMP*

- Optimized C++ algorithms to exploit **multi-core CPUs** and **Nvidia GPUs**, achieving significant speedups over baseline implementations.
- Implemented hardware-level optimizations including **SIMD vectorization**, **instruction-level parallelism**, and **OpenMP multi-threading**.
- Developed **CUDA kernels** to leverage massive parallelism on GPUs for numerical and combinatorial problems.
- **Analyzed assembly code** and memory layouts to eliminate performance bottlenecks and maximize hardware throughput.

DECEMBER 2025

"It's Airborne" – Disease Spreading Simulator | *Python, NetworkX, NumPy*

- Developed a Susceptible-Infected (SI) disease spreading model to simulate pathogen transmission across a temporal network of US air traffic.
- Implemented a time-stepped simulation engine in **Python** to model epidemic spread through a network of time-stamped flight events.
- Created dynamic visualizations of infection pathways across a geographic map of the US using **Matplotlib's FuncAnimation** and the PIL library.
- Implemented features for node immunization and tracked infection origin (transmission trees) to visualize the Maximum Spanning Tree of the disease spread.

Technical Skills

Programming & Frameworks:

- **Systems & Scripting:** C/C++, Python, Java, JavaScript, R, SQL.
- **Web & Cloud:** Deno, Hono, Svelte, Node.js, PostgreSQL.
- **High-Performance:** CUDA, OpenMP, SIMD (AVX-512) vectorization.

DevOps & Infrastructure:

- **CI/CD & Version Control:** Git (Power User), GitLab CI, GitHub Actions.
- **Virtualization:** Docker, Kubernetes, Cloud-native architecture.
- **Systems:** Linux System Administration, Bash scripting, Network Protocols (TCP/IP).

Quality Assurance & Testing:

- **Automated Testing:** Unit, Integration, and End-to-End (E2E) testing.
- **Tools:** JUnit, Mockito, JaCoCo, Selenium, Playwright.

Specialized Knowledge:

- **Data & AI:** AI Agent development, Temporal Network Analysis, Machine Learning.
- **Networking:** Distributed Systems, Network Security, Embedded Real-Time Systems.