

# Hung Nguyen Manh

[hmn16@usf.edu](mailto:hmn16@usf.edu) | [linkedin.com/in/hmn774/](https://www.linkedin.com/in/hmn774/) | [github.com/silverfoxpt](https://github.com/silverfoxpt)

## EDUCATION

**University of South Florida**  
*Bachelor of Science, Computer Science*

Tampa, Florida  
2023 - 2027

## TECHNICAL SKILLS

**Languages:** C++, C#, Java, Python  
**Frameworks:** Unity, Qt5, Spring Boot, Django  
**Developer Tools:** Git, MySQL, PostgreSQL, Visual Studio, Visual Studio Code  
**Libraries:** SFML

## EXPERIENCE

**Programming Mentor** Dec. 2023 – Present  
*Self-operated Online*

- Designed 8+ bilingual (English + Vietnamese) lesson plans for secondary-level students, focusing on fundamental concepts in C++ such as variables, arrays, and loops.
- Utilized Codeforces's Polygon framework to efficiently craft problem statements and manage submissions.

**Software Development Intern** Oct. 2022 – Jul. 2023  
*FPT Information System Hanoi, Viet Nam*

- Developed 50+ RESTful APIs using Spring MVC, handling dataset of up to 100k records with PostgreSQL and MySQL.
- Implemented lightweight authentication and authorization systems using Spring Security.

## PROJECTS

**Parser & Computer Algebra System (CAS) | C++, SFML** Oct. 2023 – Dec. 2023

- Handled up to 10k mathematical characters parsing with Pratt Parser.
- Designed a Computer Algebra System (CAS) that automatically reorders and simplifies mathematical expressions using principles from "Computer Algebra and Symbolic Computation" by Joel S. Cohen.

**Underwater Physic Engine | C++, SFML** Jul. 2023 – Aug. 2023

- Utilized Verlet and Euler Intergration to simulate constrained system and spring-damper model of up to 20k constraints/springs running at 60+ FPS; combined with L-System calculation to simulate aquatic greenery.
- Implemented Perlin flowfield and Flocking algorithm to create realistic underwater boids simulation of 500+ objects.

**Microscopic Traffic Simulator | C++, SFML** Mar. 2023 – Jul. 2023

- Utilized the Intelligent Driver Model (IDM) to simulate traffic of up to 200+ cars.
- Implemented traffic lights and intersections, on which cars can dynamically avoid and queue.
- Create, modify and save up to 50+ new tiles using the JSON format.

**Graph Drawer | C#, Unity**

- Implemented Unity's physics and GUI system to help learners create and modify directed/undirected graphs of up to 50 nodes.
- Visualized graph-related algorithms: DFS, BFS, Dijkstra, Bridges and Articulation Points, Strongly Connected Components (Tarjan's algorithm)

## CERTIFICATIONS & AWARDS

**Second prize, Hanoi National University of Education Informatics Competition for High School Students**  
*Issued Apr. 2023*  
**First place, USF Devfest Tampa Bay 2023**