
EDUCATION

Lincoln, NE, USA **University of Nebraska—Lincoln** **Aug. 2019 — Est. May 2023**

- Bachelor of Science, double major in Computer Science and Mathematics (Discrete Math and Cryptography).
- *Current GPA*: 4.0/4.0 (56/120 credit hours, 13 A+ courses, 3 A courses).

Ho Chi Minh City, Vietnam **High School for the Gifted** **Aug. 2016 — May. 2019**

- Computer Science honor class, focus on Data Structures and Algorithms. *GPA*: 9.7/10.0.

EMPLOYMENT

Software Engineer, Part-time **Zalo Group, Vietnam** **Aug 2018 – Aug 2019**

- Team Core Backend - R&D. I optimized, maintained, and implemented new features for an in-house key/value database handling data of 100 million users and an in-house HTTP long polling edge server.

Undergraduate Research **UNSAT Group, UNL** **Mar 2020 – now**

- Research focus on software testing and verification: using dynamic and static analysis techniques to learn program interactions and invariants.
- Started doing **UCARE** since *Aug 2020*.

Production Engineer Intern **Facebook** **Jun 2020 – Aug 2020**

- Implemented automatic resources allocation adjustment based on historical usage for a distributed batch job scheduler (C++ and Java).

PUBLICATIONS

1. KimHao Nguyen and ThanhVu Nguyen. *GenTree: Using Decision Trees to Learn Interactions for Configurable Software*, International Conference on Software Engineering (ICSE), accepted, 2021.
2. ThanhVu Nguyen and KimHao Nguyen. *Using Symbolic Execution to Analyze Linux KBuild Makefiles*. International Conference on Software Maintenance and Evolution, New Ideas and Emerging Results (ICSME NIER), pages 712–716, 2020.

PERSONAL PROJECTS

- **Gomoku AI Engine** (2018). Plays Gomoku game with a strong artificial intelligence algorithm (alpha-beta search, heuristic evaluation, threat-based search, transposition table). C++ (AI, HTTP+WebSocket Server), HTML/CSS/JS (Web UI).
- **Energy Mesh** (2016). Monitors the electric energy consumption of each device in a house in real-time by using a mesh network of sensors. C++ (embedded firmware), NodeJS (back-end), AngularJS (front-end).
- **Smart Home** (2013). Controls home appliances using a RF remote, a smartphone, or any computer with an internet connection. *Assembly (8051)*, C (AVR), VB.NET (Windows, Windows Mobile).
- **Laser Bot** (2015). Engraves images or vector graphics onto wood, cloth or any burnable materials using a laser beam. C++ (embedded firmware), Java (PC Software).

AWARDS/ACTIVITIES

- **First Prize** at site, **Second Prize** in region at the International Collegiate Programming Contest (ICPC) North Central NA Regional Contest.
- **First rank** (2018), Asia-Pacific Informatics Olympiad — Online Contest.
- **Best Young Inventor Award** (2014), by World Intellectual Property Organization (WIPO).
- **2 × Gold Medal** (2013 & 2014), at Asian Young Inventors Exhibition 2013 and 2014.
- **Special Award** (2013), by Korea Invention Academy (KIA), for Smart Control Panel project.