

(Nathan) Khoi Nguyen Trinh

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EDUCATION

University of Illinois Chicago Expected Graduation: **May 2026**
Bachelor of Science in Computer Science, Minor in Business Administration GPA: **4.0**
Relevant Coursework: Data Structures, Algorithms, Software Design, Artificial Intelligence, Object-Oriented Programming, Systems Programming, Linear Algebra, Web Development (CodePath), Android Development (CodePath)

SKILLS

Programming Languages: Python, C/C++, Java, JavaScript, SQL, Kotlin, Dart, PHP
Frameworks/Platforms: React, Next, Node, Vite, Astro, Yui, Spring, Bootstrap, Flutter, Flask, Jest, Maven
Technologies: HTML/CSS, Git, ASAN, RESTful APIs, JWT, OAuth, MariaDB, SQLite, Postman

EXPERIENCE

Student Research Assistant | UIC ELiCIT Lab May 2025 - Present

- Design interactive user flow concepts to visualize AI reasoning for a privacy education tool through developing and testing early interface prototypes and sketches.

Data Structures Teaching Assistant | UIC Department of Computer Science January 2025 - Present

- Mentor **400+** students in C++ data structures and algorithmic problem-solving, offering course material and project support during lecture assistance and weekly in-person office hours.
- Assist in weekly lab sessions for **30+** students, covering complex concepts such as binary trees, hash tables, graph algorithms, and searching & sorting techniques.
- Guide students in using tools such as Git, ASAN, and GoogleTest to improve coding efficiency, version control, and debugging practices in software development.

Software Developer Intern | Viettel Digital June 2024 - August 2024

- Developed RESTful APIs for user interaction in PHP, Spring and Yui for an integrated social network system, increasing engagement and connectivity for over **24 million** users.
- Implemented **JWT** and **OAuth 2.0** for secure, role-based API authentication and authorization across users, merchants, and admins, enhancing security and system performance.
- Improved database performance by **40%** through optimized query optimization and API validation with Postman, while collaborating in Agile sprints to improve system scalability.

Software Developer Intern | VISSOFT July 2023 - August 2023

- Adapted the **Bloom Filter** algorithm for fast data retrieval, reducing lookup time and cutting memory usage by **80%** in a Java-based library management system with a MySQL backend.
- Integrated the **GoogleTest** framework to develop **20+** unit tests, ensuring functionality through automated testing.

PROJECTS

Digital Privacy | React, Vite, Llama 3-70B | [Website](#) May 2025

- Built a privacy-awareness web app for children using React and Llama 3-70B, themed around “Monsters, Inc.” to deliver an engaging, story-driven learning experience.
- Designed a dynamic “canister” mechanic powered by 30+ regex patterns for personal-info detection, achieving **90%** accuracy and reducing false positives by **25%** in user tests.
- Developed a multi-phase AI chat system with memory and retry logic, handling **700+** chat sessions during a 2-week pilot from 5+ play testers to refine UX and dialogue flow.

TariffFarm (WildHacks 2025 Winner) | Python, Flask, Next.js, Gemini | [GitHub](#) April 2025

- Collaborated in a team of 4 to develop a web app that calculates and visualizes U.S. import costs for agricultural commodities, earning **3rd place overall** at WildHacks 2025.
- Engineered a Flask backend with API endpoints and data pipelines to process real-time trade data, and adapted cost calculation algorithms to suggest shipping routes with detailed analysis from Gemini AI.
- Developed an interactive frontend using **Next.js** and **amCharts**, delivering real-time globe visualizations and a dynamic, responsive UI for an intuitive experience.

Autonomous Debris Removal Vehicle | Python, OpenCV, Dart | HackIllinois 2025 | [GitHub](#) February 2025

- Collaborated with a team of 4 to build an autonomous debris removal vehicle aimed at improving crop harvesting efficiency.
- Programmed a Raspberry Pi for real-time control and sensor integration, achieving **90% accuracy** in real-time debris detection and removal using **OpenCV**, cameras, and ultrasonic sensors.
- Built a **Flutter-based** mobile application to remotely control the robot’s operations while monitoring essential data.

LEADERSHIP & ACTIVITIES

Web Developer Organizer Lead | SparkHacks 2026 June 2024 - Present

- Lead web development efforts for UIC’s hackathon, coordinating website design and deployment across the dev team.

Hackathon Organizer | SparkHacks 2025 August 2024 - February 2025

- Coordinated logistics for UIC’s hackathon with **400+** participants, worked with a team of 4 to manage a **\$30,000+** budget, secured catering, prizes, and oversaw event setup and operations.

Event Coordinator | Vietnamese International Student Association at UIC January 2025 - July 2025

- Organize cultural events for UIC’s Vietnamese international student community, averaging **100+** major events attendees.