(Nathan) Khoi Nguyen Trinh

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EDUCATION

University of Illinois – Chicago　　　　　　　　**Expected Graduation**: December 2026
Bachelor of Science in Computer Science　　　　　**Cumulative GPA**: 4.0

- **Awards & Honors**: UIC Global Academic Excellence Scholarship, Dean's List (5x)
- **Hackathon Organizer** for SparkHacks 2025

Relevant Coursework: Data Structures, Algorithms, Software Design, Artificial Intelligence, Object-Oriented Programming, Computer Design, Systems Programming

SKILLS

Programming Languages: Python, C/C++, Java, JavaScript, PHP, SQL
Frameworks/Platforms: HTML/CSS, Spring, React, Node.js, Bootstrap, Jest, Google Test, Maven, Yii, Django
Technologies & Tools: Git/GitHub, Confluence, Nginx, Rest API, JWT, OAuth, MariaDB, SQLite, Postman

EXPERIENCE

Undergraduate Teaching Assistant - CS 251 (Data Structures)　　　　　January 2025 - Present
UIC College of Engineering

- 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**, strengthening students' comprehension of complex concepts such as binary trees, hash tables, graph algorithms, and advanced debugging techniques.

Java Developer Intern　　　　　　　　　　　　　　　　June 2024 - August 2024
Viettel Digital

- Developed **RESTful APIs** for user interaction in **PHP**, **Spring** and **Yii** for an integrated social network system, increasing engagement and connectivity for over **24 million** users.
- Implemented **JWT** and **OAuth 2.0** for API authentication and authorization of users, merchants, and admins, enhancing security and system performance.
- Improved database query performance by **40%** using optimized data retrieval techniques and API validation via **Postman**.

Software Developer Intern　　　　　　　　　　　　　　July 2023 - August 2023
VISSOFT

- Adapted the **Bloom Filter** algorithm for fast data retrieval, saving **80%** of memory usage in a Java library system.
- Constructed and optimized a mySQL backend for improved processing and data handling.
- Integrated the **Google Test** framework to develop **20+** comprehensive unit tests, ensuring reliability and functionality.

PROJECTS

Spotify Album Rating | Node.js, Vite, React, JavaScript　　　　　　　　July 2024
GitHub Link

- Developed a music ranking app using **Spotify Web API** to search for artists and rate albums, providing an intuitive UI with **React** for a personalized experience.
- Implemented features for saving user ratings locally for data persistence, reducing data retrieval times by **25%**.

Battleships | Java, JavaFX, SQLite　　　　　　　　　　　　　　　　April 2024
GitHub Link

- Coordinated a team of 4 to rebuild Battleships with asynchronous AI logic using the *Callable* interface in core Java, improving game computations and responsiveness.
- Designed a **SQLite** database schema to store and retrieve player statistics, enabling an Elo-based matchmaking system that adjusts ratings on results and matches players for balanced competition.
- Incorporated a secure chat system with unique session IDs, allowing players to communicate only within the same session, ensuring privacy and integrity.

Campus Navigation | C++, OpenStreetMap　　　　　　　　　　　　November 2023
GitHub Link

- Implemented a campus navigation app to navigate people from two different buildings to a center building, applying **Dijkstra's** shortest weighted path algorithm to find the fastest route.
- Processed real-world data from **OpenStreetMap** to construct an information library on roads, buildings, and walkways that might be utilized on any campus for navigation along mapped routes.
- Adapted core functionalities of effective data structures, depth-first search algorithms, and file I/O operations.