

# Nam Hai Nguyen

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## EDUCATION

### Michigan State University

East Lansing, Michigan

*Bachelor of Science in Computer Science, Minor in Actuarial Science*

09/2022 -- 05/2026

**Coursework:** Data Structures and Algorithms, Object-Oriented Software Development, Database Systems, Computer Organization and Architecture, Computer Systems (in progress), Algorithm Engineering (in progress)

## EXPERIENCES

### Software Engineer Intern

Hanoi, Vietnam

*A.I-Soft*

05/2024 -- 08/2024

- Engineered **15 API endpoints** for the backend service of the **human resource management system** with a point system allowing users to export tree structure data into Excel data by utilizing **ExcelJS, NestJS, PostgreSQL, and DBeaver**
- Contributed to an **online payment system** for universities by leveraging **job scheduler node-cron** and **message queue BullMQ** to handle hourly balance checking and automatic receipt payment

### Undergraduate Research Assistant

East Lansing, Michigan

*Michigan State University*

09/2022 -- 05/2024

- Integrated NELoRa architecture and retrained **dual-Deep Neural Networks model** to translate and decode spectrogram images into frequency data using **Python and PyTorch**, increasing the communication range of the model and **extending each battery life** of each node **by 272%**

## PROJECTS

**PeacePod** | *JavaScript, Chakra UI, socket.io, OpenAI, ElevenLabs, Spotify, DiceBear, Cloudinary*

- Collaborated in a team of 4 to build a unique healing website aiming to foster deeper connections among people with mental health issues and guide them to calmness, featuring a **newsfeed, anonymous chatting and personalized meditation sessions**
- Spearheaded the **AI feature** to generate personalized daily prompt and meditation scripts using **OpenAI API** featuring **ElevenLabs API** for seamless audio conversion
- Translated high-fidelity UI mock-ups from Excalidraw into pixel-perfect landing, sign-up, and mediation pages by leveraging **ChakraUI, Framer Motion, and React** components
- Architected schemas and 15 API endpoints** for all the core features of users and prompts, including retrieving daily prompts, creating prompt responses, and matching users for the anonymous chat
- Enhanced security and user experience by utilizing **JWT for authentication and authorization** along with **socket.io for real-time messaging**
- Implemented various **third-party APIs** to support core functionalities: **DiceBear** for avatar customization, **Spotify** for music streaming, **Cloudinary** for media file upload and storage

**CourseFlow** | *TypeScript, ExpressJS, React, React Flow, zustand, Vite, MongoDB, bcrypt*

- Created an interactive node-base web application to help students map out courses in the form of flowcharts featuring **MERN stack, TypeScript, and zustand for state management**
- Leveraged **TopoSort algorithm** to generate flowcharts given users' desired course and its prerequisites
- Developed the **authentication system with JSON Web Tokens** and **hash passwords with bcrypt**, safeguarding users from potential breaches

**Halloween-Spartan-Themed Action Sudoku** | *C++, wxWidgets, Git, Trello*

- Built an engaging character-based game of Sudoku using **C++ backend** and **wxWidgets frontend**
- Constructed features such as the About page, Solve button and functionalities, and a moving main character
- Led the **Agile development** for a team of 5, organizing meetings and managing tickets on **Trello**

## TECHNICAL SKILLS

**Languages:** Python, C/C++, JavaScript, TypeScript, Java, SQL (SQLite), HTML/CSS, Assembly

**Frameworks:** React, Chakra UI, Node.js, NestJS, Jest, mocha

**Developer Tools:** Git, GitHub, GitLab, AWS, VS Code, Visual Studio, PyCharm, IntelliJ, Clion, Postman

**Libraries:** pandas, NumPy, matplotlib