

# Nam Hai Nguyen

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## EDUCATION

### Michigan State University, Honors College

East Lansing, Michigan

*Bachelor of Science in Computer Science, Minor in Actuarial Science (GPA: 4.0/4.0)*

09/2022 – 05/2026

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

## TECHNICAL SKILLS

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

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

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

**Libraries:** Redux, zustand, pandas, NumPy, matplotlib

## EXPERIENCES

### Software Engineer Intern

Hanoi, Vietnam

*A.I-Soft*

05/2024 – 08/2024

- Built **15 NestJS API** endpoints with **PostgreSQL** for an HR system, supporting CRUD for profiles, jobs, and departments
- Engineered an **ExcelJS** tool to export tree-structured data into pivot tables and charts, reducing report time by **25%**
- Developed an e-payment system for **3 universities** using **node-cron job scheduler** to initiate automated hourly balance checking, ensuring accurate balance data for **1,000+** users
- Implemented an asynchronous payment receipt execution queue with **BullMQ**, automatically settling payments until the user's balance is depleted, ensuring zero downtime during peak hours and improving transaction throughput by **20%**
- Engineered **5 REST API** endpoints to automate **check-in/check-out transactions** for a university's library network using barcode scanning, streamlining circulation operations and reducing front desk staff time by **4.25 hours** per week

### Undergraduate Research Assistant

East Lansing, Michigan

*Michigan State University*

09/2022 – 05/2024

- Integrated **NELoRa** architecture and retrained dual-Deep Neural Networks to decode spectrogram images into frequency data using **Python and PyTorch**, increasing the model's communication range and extending each node's battery life by **272%**
- Performed data augmentation by injecting Gaussian noise into raw signal images for **30,000+** data points using **MATLAB** to enhance model robustness and generalization by simulating real-world variations, resulting in a **1.84dB - 2.35dB SNR gain**

## PROJECTS

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

- Collaborated in a team of 4 to build a **full-stack meditation app** utilizing AI to generate personalized meditation sessions and scripts with human-like voices, using **MERN** stack along with **OpenAI** and **ElevenLabs APIs**
- Translated Excalidraw wireframes into pixel-perfect UI by leveraging **Chakra UI**, **Framer Motion**, and **React** components
- Designed **MongoDB schemas** and **18 API endpoints** for all features of users and prompts, including retrieving daily prompts, creating prompt responses, customizing accounts, and matching users for anonymous chatting
- Integrated **third-party APIs** to support core functionalities: **DiceBear** for dynamic avatar customization, **Spotify** for seamless music streaming, **Cloudinary** for efficient media file upload, storage, and retrieval

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

- Developed a **CS course planner** for 500 college students, applying **TopoSort** algorithm within **React Flow** to create interactive visualizations of degree requirements and prerequisites
- Secured user accounts by designing an authentication system with **JSON Web Tokens** and hashing passwords with **bcrypt**
- Utilized **Zustand** to manage 20 global states, ensuring seamless data flow and a user-friendly experience

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

- Led **Agile development** for a team of 5, organizing meetings and managing tasks on **Trello** to ensure timely feature delivery
- Built a character-based game of Sudoku using **C++ backend** for game logic and **wxWidgets frontend** for user interface
- Constructed key features, including an interactive About page, a fully functional Solve button, and a moving main character