

# Ha Binh Nguyen

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## EDUCATION

**Arizona State University**, Ira A. Fulton Schools of Engineering | Tempe, AZ

Expected Graduation December 2024

*Bachelor of Science in **Computer Science***

**Cumulative GPA:** 4.15/4.0

**Honors and Awards:** NAMU's Scholarship (\$56,000), Devils Invent: Land, Air and Sea (Hackathon) - 3<sup>rd</sup> Prize Winner (\$500)

## SKILLS

- **Programming:** JavaScript, C/C++, Java, Python, HTML, CSS, Typescript
- **Frameworks/Tools:** MongoDB, Express.js, React.js, Node.js, Bootstrap, Next.js, Qt C++, Mongoose, Passport.js, Ffmpeg, Opencv, Google Firebase, Google Cloud, Postman, Github, Heroku, Docker

## PROJECTS

**YelpCamp (Fullstack app built with MERN stack)** ([bit.ly/binh-yelpcamp](https://bit.ly/binh-yelpcamp))

Jun 2023 – Aug 2023

- Developed a dynamic full-stack web application, YelpCamp, leveraging cutting-edge technologies such as Node.js, Express.js, MongoDB, Bootstrap and JavaScript. App implemented CRUD functionality and Model–view–controller design pattern.
- Implemented user authentication and authorization with Passport.js. Designed to avoid common security attacks such as Mongo injection or Cross-site scripting. Utilized Sessions to establish secure login system and ensure seamless user experience
- Created a database schema to store campground information, user details, and user reviews using MongoDB and Mongoose
- Integrated the Mapbox API to enhance the application by providing interactive campground maps

**Youtube Clone** (<https://yt-web-client-gq7klg4nva-uc.a.run.app/>)

Jun 2023 – Jul 2023

- Engineered a YouTube clone leveraging TypeScript, Next.js, Express.js Adopted a Dockerized deployment strategy.
- Implemented FFmpeg for efficient video compression, paired with Firebase Functions to manage uploads. Optimized storage with Google Cloud Storage, ensuring swift retrieval and playback, while Google Cloud Pub/Sub was harnessed to trigger events
- Incorporated Firebase Firestore for robust web hosting and utilized Firebase Auth for secure Google account authentication

**My Portfolio Website** (<https://ezngbi.github.io/personal-portfolio/>)

May 2023 – Jun 2023

- Developed a responsive portfolio website with React and implemented advanced animations using CSS and React Bootstrap
- Utilized React components and state management techniques to ensure a modular and maintainable codebase

**VivyNet AI Research Lab at ASU**

Feb 2023 - Present

- Developed an AI model on Python that translates text input into music using an encoder-decoder architecture with BERT as the encoder and SymphonyNet as the decoder
- Collaborated with the team of 4 people to compare the performance, efficiency, and accuracy of the encoder-decoder model with the lab's primary transformer model for text-to-music translation

## EXPERIENCE

**Oryza Systems**

May 2023 – Jul 2023

*Software Engineer Intern*

- Constructed a Video Management System (VMS) using Qt C++ to enable real-time monitoring of IP cameras, review of video recordings, and intelligent video analysis by implementing video and image processing AI models
- Upgraded the VMS to support 32 simultaneous camera streams, up from 1 stream, using OpenCV, FFmpeg, and C++ multi-threading techniques. Optimized performance enabling image processing on basic hardware with no external GPU needed
- Analyzed and integrated UI features from open-source Nx-Meta to the project, enhancing user interface and experience
- Collaborated with 5 other engineers to develop RESTful APIs for login, and data management based on the CRUD principle. Implemented real-time intelligent video analysis using WebSocket connections for data transfer between server and client.

**Arizona State University**

Aug 2023 - Present

*Undergraduate Teaching Assistant – CSE 230*

- Assisted professor in concepts like assembly language, instruction sets, registers, memory operations, exception handling, and processor organization and design.
- Assessed students' assembly code assignments, checking for optimal use of registers and memory and offered targeted feedback on students mistakes. Guided students through the intricacies of debugging in assembly language.

**Arizona State University**

Jul 2022 - Present

*Resident Assistant*

- Organized 10 events and worked with a team of 40 RAs to foster community and build relationships among dorm residents
- Managed and mentored 60 first-year students, ensuring their well-being and enforcing campus policies