

Ji Bing Ni

US Citizen | +1 (317) 625-5961 | jibingni17@gmail.com | linkedin.com/jibing | github.com/jibing | [jibing17/portfolio](https://jibing17.com/portfolio)

EDUCATION

Purdue University

Bachelor of Science in Computer Science

West Lafayette, IN

Aug. 2022 – May 2026

EXPERIENCE

Music Software Development Research Assistant

Jan. 2025 – Aug. 2025

Purdue University

West Lafayette, IN

- Achieved real-time audio to sheet music alignment with **OSMD API** and **Dynamic Time Warping**
- Developed a music evaluator app with **React Native** and **TypeScript** for improving musicians' performance
- Reduced potential hosting costs by migrating app from **client-server** to a **serverless architecture**
- Enhanced app scalability by **approx. 10%** through creation of **4+ reusable UI components**
- Improved production readiness by **approx. 15%** via **Expo Go** for real-device testing on **iOS** and **Android**

Systems Programming Teaching Assistant

Jun. 2025 – Present

Purdue University

West Lafayette, IN

- Led **30+ labs** for **40+ students**, improving debugging efficiency and conceptual understanding in **C/C++** via projects on a **custom shell interpreter**, **malloc**, **Bash scripting**, and **HTTP server development**
- Increased project completion rates by **approx. 20%** for **40+ students** through **20+ office hours**
- Improved comprehension for **40+ students** by **approx. 15%** through grading labs & exams with feedback

Frontend Developer

Aug. 2024 – Dec. 2024

Purdue Vertically Integrated Projects

West Lafayette, IN

- Attracted new users to **ECE Labs.io** by building a responsive landing page with **HTML**, **CSS**, and **JavaScript**
- Optimized navigation speed by **approx. 20%** for **450+ students** through a modern **responsive layout**
- Boosted maintainability and scalability by modularizing **5+ components**, reducing future development overhead

Undergraduate Data Science Researcher

Aug. 2024 – May 2025

The Data Mine - Purdue University

West Lafayette, IN

- Reduced call center reliance by building an **AI chatbot** for **Wabash** in an **8-member Agile team**
- Enhanced response quality using **prompt engineering** with an **NLP model** and **machine learning**
- Enabled scalable chatbot interactions by implementing a front-end with **RESTful API** and back-end integration
- Strengthened reliability across **20+ devices** through **5+ API tests** validating connectivity and data accuracy

PROJECTS

PokéWorld | React, Express.js, Node.js, MongoDB, REST APIs

May 2024 – Present

- Developed an interactive Pokémon platform with a full-stack **MERN app** powered by **PokéAPI (1,000+ Pokémon)**, **Pokémon TCG API (150+ sets, 10k+ cards)**, and **TMDB API (20+ movies)** for fan exploration
- Secured accounts with **bcrypt**-hashed passwords in **Express.js** and **MongoDB**, built to support **1,000+ users**
- Designed a scalable UI with **4+ reusable components** using **Material-UI** and **TailwindCSS**
- Reduced API calls by **approx. 20%** through **React Context API**, **caching**, and **pagination**

BoilerFinds | React, Flask, PostgreSQL, Bootstrap, TMDB API, OpenStreetMap API

Feb. 2025 – May 2025

- Engineered a full-stack platform using **React**, **Flask**, and **PostgreSQL**, supporting large-scale user discovery
- Enhanced UX through a responsive **Bootstrap** UI, powering **10+ pages** and **20+ reusable components**
- Implemented a scalable **RESTful API** with **Flask** and **PostgreSQL**, supporting data for **1M+ users**
- Enabled **1M+ movie discovery** and interactive restaurant maps via **TMDB** and **OpenStreetMap APIs**

Custom Unix Shell | C++, Lex, Yacc, POSIX

Jan 2024 – May 2024

- Built a **Unix-like shell in C++** with **command execution**, **pipes**, **I/O redirection**, and **background jobs**
- Enabled advanced features such as **expansions**, **subshells**, and **wildcards** using a **Lex/Yacc-based parser**
- Strengthened shell reliability with **signal handling** for events such as process termination and user interrupts

TECHNICAL SKILLS

Languages: Java, Python, C, C++, JavaScript, TypeScript, SQL, R, HTML, CSS, Tailwind CSS

Frameworks: React, React Native, Flask, Express.js, Node.js, MUI, Bootstrap, MongoDB, PostgreSQL, SQLite

Developer Tools: Git, GitHub, Azure DevOps, LaTeX, VS Code, IntelliJ, Eclipse

Libraries: pandas, NumPy, Matplotlib, BeautifulSoup, SQLAlchemy