John Flanagan

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EDUCATION

University of Notre Dame — Notre Dame, IN
Bachelor of Science in Computer Science, Mathematics — *Aug 2021 – May 2025*
- GPA: 3.81/4.00
- Relevant Courses: Algorithms, Data Structures, Systems Programming, Operating Systems, Artificial Intelligence

London Global Gateway — London, UK
University of Notre Dame — *Jun 2022 – Aug 2022*
- Participated in a six-week engineering study abroad program at Notre Dame's London Global Gateway.

EXPERIENCE

Garmin — May 2024 – Aug 2024
Software Engineering Intern — *Kansas City, MO*
- Led the development of a progressive web app for parcel delivery management, automating email reminders and optimizing package handling for over 10,000 employees, processing 5,000+ parcels monthly.
- Built a scalable backend API using Spring Boot, PostgreSQL, and Redis, reducing manual processing time by 30%.
- Created a responsive Vue.js frontend for intuitive parcel handling and streamlined employee pickups.

Ford Motor Company — May 2023 – Aug 2023
Software Engineering Intern — *Remote*
- Collaborated on a loan management web application, serving a nationwide user base of over 2800 Ford dealerships.
- Developed Spring Boot API services with Microsoft SQL Server, handling 20,000+ daily transactions.
- Enhanced CI/CD pipeline performance by 25% using Jenkins, and resolved Angular form and validation issues.

DM^2 Lab — Aug 2023 – Present
Undergraduate Research Assistant — *Notre Dame, IN*
- Conduct research on natural language processing with Dr. Meng Jiang, focusing on Large Language Models.
- Co-authored a paper on decision tree explainability using LLMs, accepted at NeurIPS XAIA 2023 Workshop.

University of Notre Dame — Aug 2023 – Present
Teaching Assistant — *Notre Dame, IN*
- Lead weekly office hours, grade assignments, and instruct over 100 students in Computer Architecture.
- Teach topics including architectural design, MIPS assembly programming, and performance evaluation.
- Previously served as a teaching assistant for Theory of Computing, focusing on automata and complexity theory.

PROJECTS

AI Blog Generation Website | *MongoDB, TypeScript, Next.js, React* — Jun 2023 - Aug 2023
- Engineered an AI-driven platform for generating high-quality blog posts from text or media inputs.
- Enabled user authentication, validation, and content management with a professional design using Tailwind CSS.

Group Spotify Application | *SQLite, Python, Django, React* — May 2023
- Developed a mobile-first platform for collaborative music listening with a modern interface using Material Design.
- Integrated real-time group Spotify sessions, supporting over 100 concurrent users with host control features.

Web Scraping Class Search Tool | *Python* — Apr 2023
- Constructed a Python and Selenium-based tool to scrape course data from Notre Dame's Class Search website.
- Implemented class tracking with email notifications, reducing average manual search time by 80%.

TECHNICAL SKILLS

Languages: Python, C, C++, Java, JavaScript, TypeScript, R, Bash, SQL, MATLAB
Frameworks: React, Angular, Vue.js, Express, Next.js, Spring Boot, Django, Flask, Fast API
DevOps & Cloud: Git, Docker, Jenkins, Maven, Gradle, Node.js, Linux, AWS, PCF, Heroku, Vercel