William J. Hoppe

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EDUCATION

University of Notre Dame   **Notre Dame, IN**
GPA: 3.88/4.00 | Dean's List   Class of 2025
Major: Computer Science

EXPERIENCE

Capital One   **Richmond, VA**
Software Engineer Intern   *June 2024 – August 2024*
- Implemented data-driven dropdown suggestions to the main search component of Capital One's credit card support agent platform, increasing efficiency for thousands of agents in every customer interaction.
- Engineered a search suggestion ranking system for 60,000+ support documents that analyzes keyword usage patterns of support agents through historical clickstream data, predicting the best articles for each query.
- Built an ETL architecture using Python to extract data from Snowflake, apply the suggestion ranking system, and load results into AWS S3. This pipeline enables high configurability and adaption to evolving search patterns.

Keough School of Global Affairs   **Notre Dame, IN**
Artificial Intelligence Research Assistant   *August 2023 – May 2024*
- Collaborated individually with a professor of Tech & Global Affairs to conduct experimental research, exploring the practical utility of fine-tuning the response style of a Large Language artificial intelligence model.
- Implemented a web scraper using the Beautiful Soup Python library to extract transcripts of 4000+ TED Talks.
- Fine-tuned Llama 2 model with TED Talk transcripts and critically compared response style to standard model.

Human-Computer Interaction Lab   **Notre Dame, IN**
Research Assistant   *December 2022 – January 2024*
- Collaborated on two projects, contributing to multimillion dollar grant-funded research relating to HCI and UX.
- Led a user study for a Node.js application designed to enhance the graduate student admission verdict-making process through organizing and quantifying the analysis of application materials and relevant decision factors.

Cadets Cut   **Farmington, MN**
Web Developer & SEO Analyst   *May 2022 – June 2023*
- Designed and managed company website for a home services provider with 500+ clients using WordPress.
- Expanded customer base by 150+ clients through digital exposure, driving significant revenue growth.
- Integrated custom contact form with Firebase to store and send formatted JSON data to company via email.

PROJECTS

Buddy.ai   *May 2024*
- Developed an AI-powered accountability partner iOS app using Swift, promoting positive habit formation.
- Integrated a fine-tuned Llama 3 Large Language Model hosted on Google Cloud that leverages semantic search over user data (goals, daily actions, journal entries) to provide highly personalized encouragement and feedback.
- Designed a comprehensive user interface for goal setting, habit tracking, journaling, and progress visualization.
- Leveraged SQLite3 for data persistence, enabling users to track their journey through an interactive calendar.

TuneWave   *May 2023*
- Developed web app using Node.js and JavaScript that fetches API key via serverless function deployed by Netlify.
- Utilized recurrent calls to OpenAI API to generate personalized song titles, lyrics, and album art from prompt.

COVID-19's Impact on US Economy Project   *April 2022*
- Parsed CSV data from economic institutions to construct Pandas DataFrames of quarterly trends for 15 sectors.
- Converted data into interactive Plotly graphs using Python to visualize COVID-19's impact on the US economy.
- Developed custom HTML and CSS stylesheets to present the findings effectively on the project website.

ACTIVITIES

ND Class of 2025 Executive Council   **Notre Dame, IN**
Communications Board Member   *August 2023 – May 2024*
- Orchestrated executive council media outreach and merchandise design for entire class of 2025 student body.

Dunne Hall Government   **Notre Dame, IN**
Database, Website, & Merch Commissioner   *April 2022 – May 2024*
- Overhauled dorm website to promote dorm culture and upkept database of a network for 500+ members.
- Created custom dorm merchandise and apparel with Adobe Photoshop, resulting in doubled sales of past years.

SKILLS

Languages: Python, C, HTML/CSS, JavaScript, Java, Swift, Typescript, C++, Bash, SQL, MATLAB, Bash
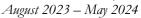**Tools & Frameworks**: Git, Node.js, React, Flask, Amazon Web Services, Vue.js, TensorFlow, Google Suite, Figma