

Xavier Briggs

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EDUCATION

University of Notre Dame | Notre Dame, IN

May 2027

Bachelor of Science in Computer Science and Engineering, ITREDS Scholar

GPA: 3.91

Relevant Coursework: Fundamentals of Computing, Undergraduate Research, Linear Algebra, Probability, Intro to AI, Data Structures

TECHNICAL SKILLS

Languages: Rust, C/C++, Python, JavaScript/Typescript, HTML/CSS

Developer Tools: VS Code, VIM, Linux, Git

Technologies/Frameworks: FlaskAPI, Node.js, Flutter, Prompt Engineering, React.js, OpenAI API, Pytorch, Scikit-learn, Firebase, Tailwind CSS, Tokio, SQLite, WebSockets, AWS EC2

WORK EXPERIENCE

TLC Manufactured Home Loans | Remote

January 2026 – Present

Freelance Software Developer

- Architected and developed `tldealers.com`, a dealer partner web application using Vite, React, Tailwind CSS, and Firebase and role-based dealer routing to streamline the manufactured home loan pipeline
- Built the consumer-facing site `tlmanufacturedhomefinanceconsultants.com` as a React single-page application with Firebase backend, implementing lead capture forms, ZIP-code-based dealer matching via Firestore Cloud Functions, and automated lead routing with radius expansion logic
- Engineered a voice AI agent using Twilio ConversationRelay and OpenAI GPT-4 with a Firebase backend, designed for high-concurrency inbound call handling and deployed on GCP/GKE to qualify and route leads automatically

Amazon Prime Video – Apple Player Team | Seattle, Washington

May 2025 – Aug 2025

Amazon Propel Intern

- Designed and implemented tvOS Picture-in-Picture functionality from scratch across 4 development phases, delivering 10+ merged code reviews with zero regressions, resolving a critical auto-pause bug, and enabling multi-player coordination using delegate and observer patterns in Swift, SwiftUI, and AVKit.
- Engineered Team Knowledge Agent infrastructure for Amazon Q CLI, reducing context window usage per prompt from 12% to 5%, cutting onboarding time for new hires, and achieving full team adoption of automated scripts and AI
- Authored comprehensive developer documentation covering Swift Package Manager (SPM) setup, symlink-based local development, and platform-specific AVKit constraints, ensuring maintainability and smooth onboarding for future developers.

Tweeds – Personal Publishing Platform | South Bend, Indiana

January 2025 – May 2025

Social Media Developer

- Collaborated on the backend for tweeds, building RESTful controllers and routes to support AI-powered endpoints integrating Google Gemini, enabling automated content analysis and asset generation
- Developed a content generation pipeline that transforms user-submitted manuscripts into personalized marketing materials and structured promotional plans, streamlining creator outreach from hours to minutes

West Main Pizza | Jefferson City, Missouri

June 2024 – August 2024

Social Media Developer

- Increased monthly online marketing revenue by 300% by creating and launching targeted campaigns on Facebook and Popmenu, resulting in a 1500% boost in impressions.
- Raised total store revenue by 11% by leveraging Popmenu's analytics to track performance metrics and generate weekly reports, to inform strategic adjustments and optimize marketing efforts based on customer behavior
- Engineered a Special Events component for the company website using JavaScript and React.js, to align with the company's goal of focusing on community engagement and promoting upcoming events, which boosted event attendance by 15% and increased website engagement by 10%

PROJECTS

Olympus – Prediction Market Trading Ecosystem (Rust, Tokio, SQLite, WebSockets, AWS EC2)

- **Atlas:** Built a production Kalshi arbitrage bot in Rust with RSA-PSS authentication, real-time WebSocket orderbook streaming, a SQLite transaction ledger, and circuit-breaker safety controls, achieving positive P&L from day one of live trading on AWS EC2
- **Aeolus:** Developed a weather forecasting strategy module ingesting GEFS ensemble data with EMOS/SAR-SEMOS calibration and CRPS scoring, targeting Kalshi daily temperature bracket markets; backtested across 4 major U.S. stations with CRPSS ranging from 0.389 to 0.659
- **Artemis:** Designed a sharp odds aggregator pipeline with power-method de-vigging, three-layer market matching, fractional Kelly position sizing, and closing line value tracking to identify and execute on mispriced Kalshi event contracts
- **Nike:** Engineered a Polymarket multi-outcome arbitrage bot in Rust targeting zero-fee neg-risk CTF contract markets, implementing EIP-712 signing, HMAC-SHA256 authentication, a nine-table SQLite schema, and three detection modes with illiquid-first sequential execution

Story Coder SABRAI (Flutter, OpenAI API, Prompt Engineering)

- Enhanced model precision and reduced misclassification rates by engineering an AI assistant pipeline leveraging OpenAI's Assistants API to assign SABR codes to transcripts of teachers' read-aloud sessions
- Improved automated classification accuracy of SABRAI from 88% to 96% rates by implementing advanced prompt engineering techniques (few-shot prompting, Chain-of-Thought prompting, and RAG), along with temperature tuning, ensuring higher-quality read-aloud code outputs
- Achieved a functional proof-of-concept application, validated through planned user studies, by designing a cross-platform Flutter front-end integrated with a FlaskAPI back-end to showcase how the final application should operate.

Together Irish BeanBag (React.js, JavaScript, MongoDB)

- Collaborated with a multidisciplinary team to design a web application for the Notre Dame Blue and Gold Game Together Irish Initiative, implementing features in React, JavaScript, and MongoDB to record and display beanbag toss scores in real-time during competitions, which enhanced engagement and participation among participants

Madness Predictor (Python, Pytorch, scikit-learn)

- Developed a PyTorch neural network to predict NCAA March Madness winners, to generate round by round probabilities for bracket play, which resulted in 70 percent test accuracy and 69.8 percent correct picks on the 2025 bracket run

Atlas (Gymnasium, Reinforced Learning, PPO)

- Built Atlas, a modular RL platform with PPO, curiosity via RND, and dense reward shaping, to accelerate Atari research and real world experimentation, which resulted in about thirty percent higher sample efficiency and a fifty percent reduction in training variance.

Xcode+Bedrock Server (Docker, FastAPI, AWS Bedrock)

- Built and deployed a Flask-based OpenAI-compatible proxy enabling Amazon Bedrock model integration in Xcode 26 to leverage Apple Intelligence features, pioneering the first cross-organizational AI integration across Prime Video, Kindle, and Q Dev teams, supported by Docker containerization and full technical documentation.

LEADERSHIP & EXTRACURRICULAR ACTIVITIES

ColorStack-University of Notre Dame Chapter | Notre Dame, Indiana

June 2024 – Present

Vice President

- Manage the budget and expenses of the ColorStack Chapter, to ensure optimal resource allocation that supports ongoing projects and initiatives, which enhances the overall effectiveness and sustainability of the organization
- Improved the ColorStack ND Buddy System, to foster academic and personal support relationships between upperclassmen and underclassmen, resulting in over half of the organization's members signing up

Management Leadership for Tomorrow

January 2025 – Present

Career Prep Fellow

- Accepted into a selective 18-month professional development program for high-achieving diverse talent
- Complete business case studies and assignments to grow leadership and technical skills
- Attend conferences hosted by industry leaders such as Deloitte, LinkedIn, and Target

CS4Good | Notre Dame, Indiana

May 2025 – Present

President

- Lead a student organization focused on leveraging computer science for social good through community-driven projects
- Organizing a cross-club "Hack for Good" hackathon with groups including ColorStack and Women in Computing to promote inclusive tech innovation
- Oversee event planning, club strategy, and member engagement to drive growth and project impact

- Selected into a competitive 13-week technical accelerator, followed by a 7-week career readiness track, to build an industry-ready AI portfolio with mentorship and responsible AI practices, which resulted in a completed end-to-end project
- Selected as 1 of 40 plus teams to present at the AI4ALL Ignite recruiter symposium for exceptional portfolio projects, to showcase Speaknolie's technical rigor and impact, which resulted in direct exposure to hiring partners and elevated program distinction.
- Built an end-to-end deepfake speech detector using Whisper transcription plus BERT modeling and a Feedforward Neural Network, to classify real versus AI-generated audio at scale, which resulted in 81.5 percent test accuracy with 0.703 recall on fakes over 31,699 transcripts and a fully reproducible pipeline.