

# Rijan Ghimire

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## Summary

Computer Engineering and Mathematics double major (University of Southern Mississippi, GPA: 4.0/4.0) with applied experience in embedded systems, software engineering, and AI/ML. Skilled in building secure, scalable applications using Python, C++, JavaScript, and TypeScript, with additional expertise in hardware-software integration and distributed systems. Proven track record of designing efficient algorithms, optimizing performance, and delivering solutions ranging from NFC-powered platforms to AI-driven automation. Eager to contribute to impactful engineering projects at scale.

## Skills

- **Languages:** Python, C++, TypeScript, JavaScript, SQL, Go
- **Frameworks & Libraries:** React, React Native, Next.js, Express.js, FastAPI, PyTorch, TensorFlow, Scikit-learn, OpenAI API
- **Databases & Cloud:** PostgreSQL, MongoDB, MySQL
- **Tools & Platforms:** Git, Docker, Docker Compose, Nginx, Unix/Linux, Bash/Shell Scripting
- **Hardware & Embedded Systems:** Proficient in microcontrollers (ESP32, Arduino), embedded C/C++, real-time systems, circuit design, PCB development (KiCad), IoT systems integration, and hardware-software co-design.
- **Core Competencies:** Embedded Systems Design & Development, Hardware-Software Integration, Firmware & Low-Level Programming, Algorithms & Data Structures, Object-Oriented & Functional Programming, Distributed & Parallel Computing, Operating Systems & Computer Networks, Secure & Scalable Application Development, Machine Learning & Data-Driven Systems, System Architecture & Design

## Education

University of Southern Mississippi	08/2024 - 05/2028
<i>Bachelor of Science in Computer Engineering</i>	GPA: 4.0/4.0
<i>Bachelor of Science in Mathematics</i>	GPA: 4.0/4.0

## Professional Experience

Applied Engineering Experience

Jan 2023 – May 2024

- **Developed an integrated school management platform** combining NFC-enabled ID cards for student and teacher attendance, an assignment submission and grading portal, and role-based dashboards, reducing administrative workload by 70% while improving data accuracy and transparency.
- **Designed and implemented a smart library management system** with automated book tracking, borrower histories, fine management, and real-time inventory analytics, leveraging database-driven reporting to minimize losses and streamline academic resource allocation.
- **Prototyped an IoT-enabled energy monitoring system** for classrooms and labs, using embedded sensors and microcontrollers to optimize power usage and provide real-time analytics for cost reduction and sustainability.
- **Built a secure e-voting platform** for student councils and campus organizations, employing encryption, authentication protocols, and distributed architecture to ensure fairness, transparency, and resilience against tampering.

## Projects

- **Liberty Jewelers (Next.js, PostgreSQL):** Designed and developed a full-stack e-commerce platform for a jewelry business with advanced search, custom product visualization, and secure checkout, enhancing customer engagement and sales.
- **PayBit (Python, FastAPI, PostgreSQL):** Built a secure Bitcoin payment application with wallet integration, encryption protocols, and real-time transaction verification, ensuring safe and transparent peer-to-peer transfers.
- **ClassNotes AI (Python, Hugging Face, React):** Engineered an AI-powered system to automatically summarize online class recordings into structured notes and key takeaways, improving accessibility for students who missed sessions.
- **Figuro (Python, TensorFlow, Blender API):** Created an application that converts spoken words and lectures into animated figures and visual explanations, enabling interactive and more engaging learning experiences.
- **IdleOps (C++, Python):** Developed an AI-powered automation tool that simulates user presence and executes repetitive in-game tasks during idle states, optimizing resource collection while maintaining system stability.

## Awards & Certifications

- National Mathematics Olympiad Finalist 2023
- Supervised Machine Learning: Regression and Classification, DeepLearning.AI