CHETANCHAL SAUD

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Education

University of Southern Mississippi   **Expected Graduation: May 2026**
Bachelor of Computer Science   *GPA: 4.00*
- Courses: Operating Systems, Computer Networks, Parallel Computing, Algorithms and Data Structures, Intro. to Software Engineering, DBMS Design, Programming Languages

Work Experience

InfoDevelopers   **Jan 2023 − July 2023**
FullStack Developer Intern   *Kathmandu, Nepal*
- Architected a **Spring MVC** application with a **modular and maintainable codebase**, leveraging **AOP** to intercept method calls, enforce security policies, and streamline cross-cutting concerns for better scalability
- Developed and integrated **responsive UI components** using **React, Bootstrap, and HTML**, ensuring seamless interaction with **RESTful APIs** while optimizing front-end performance for an enhanced user experience
- Implemented **OAuth 2.0 authentication** alongside **Spring Boot Actuators** to strengthen system security, enable real-time monitoring, and ensure production readiness with comprehensive access control mechanisms
- Optimized software delivery pipelines by streamlining **CI/CD workflows** with **Git, Jenkins, and Docker**, reducing deployment times, eliminating integration bottlenecks, and improving operational efficiency by **30%**
- Conducted rigorous **security audits with Checkmarx**, proactively identifying, analyzing, and remediating vulnerabilities to fortify **application security** and ensure compliance with industry standards

Projects

Synthara | *Link →*   **TypeScript, Next.js, tRPC, React, PostgreSQL, Tailwind, Pinecone, Prisma, Kinde**
- Developed an advanced **Retrieval-Augmented Generation (RAG)** research tool to streamline **research workflows**, featuring distinct workspaces where users can seamlessly upload, organize, and interact with research material in **contextual environments**.
- Implemented a **conversational interface**, enabling users to query and synthesize insights from research documents, links, and quick notes via a **RAG pipeline**.
- Integrated a **vector database** with **Pinecone** to store workspace data as **vector embeddings**, enabling retrieval through **semantic querying** for **contextually accurate responses**.
- Built a **full-stack application** with **Next.js** and **TypeScript**, using **tRPC** for type-safe APIs, **Prisma** and **NeonDB** for **serverless PostgreSQL**, and **Kinde** for secure user authentication.

SneakerX | *Link →*   **TypeScript, Next.js, React, Tailwind, Express, PostgreSQL, Prisma, Redux, AWS**
- Developed a **scalable inventory system** with a **dynamic dashboard**, featuring **real-time sales analytics, product tracking, and expense visualization** for improved decision-making
- Implemented a **stock management system** with a **detailed product catalog** (**images, ratings, quantities, prices**) and **expense tracking**, visualized through **dynamic charts** for insights
- Built a **full-stack app** with a **Next.js and Tailwind CSS frontend**, managed state with **Redux Toolkit**, and developed a **Node.js, Express, and Prisma ORM backend**, deployed on **AWS** (**EC2, RDS, S3**) for scalability

Cart | USM Hatchathon | *Link →*   **JavaScript, Next.js, React, Google Cloud Vision, OpenAI, LangChain**
- Developed a **PWA** to streamline grocery shopping with **automated shopping lists, real-time expense tracking, and in-store navigation**, enhancing efficiency and budgeting
- Integrated **OpenAI and Google Cloud Vision** for **personalized purchase recommendations** and **advanced product identification** using **object detection, image labeling, and text recognition** to provide detailed product insights
- Enabled **real-time expense tracking** with automatic item check-off and **intelligent purchase suggestions**, factoring in **budget constraints** to minimize impulse buys.

Technical Skills

Languages: Python, Java, C, JavaScript, Typescript, Go, C, C++, Swift

Libraries/Frameworks: ReactJS, NextJS, Spring Boot, Express, Redux Toolkit, NodeJS, Bun, LangChain, Socket.io

Tools: Postman, Git, Bash, Docker, REST API, GraphQL, AWS (**EC2, RDS, S3, API Gateway**)

Databases: PostgreSQL, MongoDB, MySQL, Firebase, Prisma ORM, Redis