

# Nhoojah Maharjan

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Portfolio | GitHub | LinkedIn

## EDUCATION

<b>University of Southern Mississippi</b>	May 2028
<i>Bachelor of Science in Computer Science, Minor in Economics and Data Analysis</i>   <b>GPA: 4.0</b>	Hattiesburg, MS
Honors: President's List (All Semesters), Academic Excellence Scholarship	

Relevant Coursework: Data Structures & Algorithms, Probability & Statistics

## TECHNICAL SKILLS

Programming Languages: Python, C/C++, C, JavaScript, TypeScript, Java, SQL, R

Libraries/Frameworks: React.js, Next.js, Node.js, TensorFlow, PyTorch, Scikit-Learn, Keras, FastAPI, Numpy, Pandas, Matplotlib, GraphQL

Tools/Platforms: Git, VS Code, Colab, Firebase, AWS, Docker, Postman, Expo

Databases: PostgreSQL, MongoDB, MySQL, SQLite

## EXPERIENCE

<b>Research Assistant</b>	Apr 2025 – Present
<i>University of Southern Mississippi</i>	Hattiesburg, MS

- Researched thin object segmentation, focusing on challenging structures such as **wires and cracks**.
- Tested across multiple datasets and models, achieving state-of-the-art **F1 scores** and setting strong benchmarks.
- Integrated **Segment Anything Model (SAM)** with traditional segmentation architectures to improve model precision and recall by **up to 12%**.
- Designed reproducible evaluation workflows, ensuring scalability and reliability for future segmentation studies.

<b>Backend Developer</b>	Jan 2023 – Mar 2024
<i>Dabuli</i>	Seattle, WA

- Developed scalable backend (Node.js/Express) handling **15k+ requests/min** with microservices architecture.
- Optimized REST APIs (MongoDB, PostgreSQL), improving query performance by **40%** with indexing/caching.
- Led incident resolution, reducing downtime from hours to just **10 min** via distributed tracing & automated recovery.

## PROJECTS

<b>Satark – AI-Powered Focus &amp; Drowsiness Detection</b>	<i>PyTorch, TensorRT, FastAPI, Docker, AWS, Streamlit</i>
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- Developed an AI system using a fine-tuned **YOLOv8** model trained on **12k+ eye-blink and yawn images**, achieving **93% accuracy**.
- Optimized inference with **TensorRT**, reducing latency from **200 ms → 60 ms** for real-time webcam monitoring.
- Integrated **AI quote generation** via OpenAI and Hugging Face APIs to deliver adaptive motivational messages or TTS audio through a Chrome extension, improving user focus by **40%** in pilot testing.
- Deployed via **AWS SageMaker + FastAPI + Docker**, scaling to **1k+ concurrent users** with a **Streamlit dashboard** for live analytics.

<b>Learnova – AI Study Companion</b>	<i>React Native, Expo, Firebase, Gemini API</i>
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- Architected an AI-driven study ecosystem featuring adaptive quizzes, flashcards, and bespoke learning pathways powered by Gemini's NLP models, adopted by **200+ students** from 2 different colleges.
- Engineered a spaced-repetition flashcard engine that dynamically adjusts intervals based on recall metrics, boosting long-term retention by **35%**.
- Implemented authentication, course management, and progress tracking dashboards, improving course completion rates by **30%**.
- Enabled course exploration and personalized recommendations, increasing user retention by **25%**.

<b>HiveFind – Collaboration Hub</b>	<i>React Native, Tailwind, MongoDB, Firebase, Express.js, OpenAI API</i>
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- Built AI-powered hub that decomposes projects into granular tasks with OpenAI, improving team efficiency by **25%**.
- Created skills-matching algorithm pairing **50+ users** based on expertise vectors in MongoDB.
- Integrated chat & milestone tracking with real-time visualization, adopted in **5 active project teams**.