NATHAN SAMSON

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EDUCATION

University of Maryland - Baltimore County   **August 2023 - May 2027**
Bachelor's, Computer Science   *GPA: 3.5*

PROFESSIONAL EXPERIENCE

University of Maryland - Baltimore County   **Baltimore, MD, USA**
Undergrad researcher   *September 2023 - Present*
- Engineered a Smart Campus application using Lidar sensors and ML algorithms to predict and view current occupancy at campus food locations, improving student dining experiences.
- Created an intuitive UI for Smart Campus app, enabling students to efficiently monitor and predict food location occupancy in real-time.
- Optimized real-time data communication by integrating MQTT and RESTful APIs, reducing latency and improving system responsiveness.
- Architected and managed RDBMS and TSDBMS databases to efficiently store and process real-time data from lidar sensors, supporting 100 queries per second.
- Enhanced server processing by 25% using edge and cloud computing, enabling real-time analysis of data from IoT sensors.
- Collaborating with professor and PhD student on research paper exploring IoT, being a main contributor

OmniSyncAI   **Remote**
Full stack Software Engineer intern   *May 2024 - July 2024*
- Engineered user-friendly CRM account setup using Node.js, React, and PostgreSQL, reducing onboarding time and increasing team invitations through AI-powered recommendations

PROJECTS & OUTSIDE EXPERIENCE

Resume website
- Developed a responsive and visually appealing resume website using React and SCSS, hosted onvercel
- The project was bootstrapped with Create React App, ensuring a robust and scalable foundation
- Implemented advanced features such as code splitting and progressive web app capabilities to enhance performance and user experience
- Utilized GitHub Actions for continuous integration and automated deployments, maintaining a well-structured and clean codebase.

BankBuddy
- Developed BankBuddy, a responsive financial chatbot using FastAPI for the backend and React for the frontend, containerized with Docker and orchestrated via Docker Compose to enable real-time API updates
- Integrated a Large Language Model through the Gemini API to provide users with instant, personalized financial advice and facilitate natural language interactions
- Implemented secure data management with PostgreSQL and enhanced the user interface with lucide-react components.

YouTube Comments Extraction and Sentiment Analysis Project
- I created a Python-based project leveraging the YouTube Data API to gather video comments for sentiment analysis
- Utilized advanced NLP techniques and machine learning models with TensorFlow and scikit-learn, enhanced by prompt engineering with the LLaMA Index

SKILLS

Skills: Data Science, Flask, HTML/CSS, Java, REST APIs, Tensorflow, Python, MATLAB, OpenCV, Data Analysis, SQL, Algorithms, AI, Machine learning, IoT, Data management, Prompt-engineering, Natural Language Processing (NLP), C/C++, JavaScript, Edge Computing, Linux, MQTT, Statistics, Docker, Kubernetes

ACHIEVEMENTS

- Nvidia Summer Bridge Program Participant
- Capital One Black and Hispanic Tech Summit Participant
- Amazon`s Campus Summer Series Participant
- UMBC CSEE Research Day 2024 Best poster Award