

# Om Padmani

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## EDUCATION

### University of Illinois at Urbana-Champaign

GPA: 3.74

Champaign, IL

*Bachelor of Science in Computer Engineering*

*Aug. 2021 – Dec. 2024*

**Coursework:** Artificial Intelligence, IoT and Cognitive Computing, Distributed Systems, Computer Systems

Engineering, Intro to Algorithms and Models of Computation, Computer Organization and Design, Computer Security 1

## CERTIFICATIONS

Microsoft **AI-102: Azure AI Engineer Associate**

2024

Microsoft **AI-900: Azure AI Fundamentals**

2024

Microsoft **AZ-900: Azure Fundamentals**

2024

## EXPERIENCE

### Software Developer Intern

May 2022 – May 2024

*Brunswick Corporation*

*Mettawa, IL*

- Served as a Software Developer Intern on a team that developed an IoT based mobile app for boat owners
- Designed and developed an image recognition Python solution that verified each branded app's pages matched their expected color and brand theme, which reduced the testing cycle for each app release by 5%
- Developed a Python data tool which aggregated multiple real boat data files in JSON to then filter, reconfigure, and order the data into a CSV which allowed for a replay functionality that was used by the QA team daily
- Collaborated with a team member to develop a load testing solution which generated tens of thousands of realistic boat data entries across multiple simulated Azure IoT devices for ingestion into a cloud platform
- Constructed Testbenches comprised of IoT based boat hardware to support IoT connectivity testing. Additionally completed end-to-end testing for IoT data ingestion, storage, and processing in the cloud
- Worked with the Azure IoT EdgeHub Dev Tool that allows a computer to act as an IoT device that can communicate with Azure IoT Central through Postman API calls
- Developed an understanding of Agile software development, quality assurance, and product knowledge

## PROJECTS

### RAG Chatbot | *Python, Pinecone, OpenAI, Langchain, NextJS, Flask*

July 2024 - Present

- Developed a retrieval-augmented generation powered chatbot that gives the LLM private grounding data to use in order to answer prompts
- Utilized Flask to create an API that calls both Pinecone and OpenAI APIs through Langchain in order to effectively embed the prompt, retrieve similar texts from the Pinecone database, and then inject this data into the original prompt to allow the OpenAI LLM to reference them in its response
- Designed the front end in NextJS so users can interact with the chatbot similar to LLMs like ChatGPT

### Machine Learning ECG Sensor | *Python, TensorFlow, Raspberry Pi*

March 2024 - May 2024

- Developed a ML ECG sensor with a partner using a Raspberry Pi that measures and diagnoses your ECG and sends the results by email
- Implemented both a classification model trained on MIT data as well as an autoencoder model for anomaly detection and then aggregated the results for higher accuracy
- Achieved 77% accuracy on the ECG diagnosis when testing on students
- Attained an approximately 20 second end-to-end solution including measurement, diagnosis, and emailed results

### x86 Operating System | *x86, C*

October 2023 – December 2023

- Collaborated with a group to design and develop an operating system from scratch consisting of a file system, paging, multiple terminals with scheduling, IDT, keyboard handler, assembly linkage, system calls, and user level program execution
- Created tests along the development path to ensure proper functionality and bug free behavior for each component

## TECHNICAL SKILLS

**Languages:** Java, Python, C, C++, Go, X86, SystemVerilog, HTML

**Frameworks:** React, Next.js, Flask

**Developer Tools:** Git, Docker, Microsoft Azure, VS Code, Anaconda, Postman, MongoDB

**Libraries:** pandas, NumPy, Matplotlib, Tensorflow