

Jatan J. Pandya

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EDUCATION

University of Massachusetts - Amherst

Amherst, MA

Bachelors of Science in *Computer Engineering and Computational Linguistics*

09/2018 – 08/2023

- **Selected Coursework:** Data Structures and Algorithms (Design and Complexity Analysis), Machine Learning, Natural Language Processing, Probability and Statistics

President | UMass IEEE Student Chapter

09/2021 – 05/2023

Chancellor Award

\$14,000 Annually

SKILLS

Languages: C/C++, Python (PyTorch, scikit-learn, pandas, NumPy), JavaScript

Cloud Services: Amazon Web Services (IoT Core, DynamoDB, S3, Lambda, Amplify)

Software Development: Linux, bash, Git, Object-Oriented Design, Agile Development

WORK EXPERIENCE

QuireTech LLC

Cresskill, NJ

Software Engineer

08/2023 – Present

- **Firmware Development**

- * Developed firmware for a **medical micro-needling device** used in facial skin rejuvenation therapy.
- * Engineered **real-time, low-latency** firmware for a Microchip **micro-controller**, integrating motors, buttons, rechargeable battery, and LEDs for seamless operation.
- * Designed **battery management algorithms** with sleep and idle modes, **cutting power consumption by 80%** and extending battery life.

- **Cloud Infrastructure**

- * Architected a scalable **AWS architecture** for a **smart reusable cup bin prototype** for reducing single-use plastic cups at outdoor venues.
- * Deployed infrastructure for uplink and downlink data exchange across **30 AWS Sidewalk** devices deployed within a **0.25 mile** radius.
- * Implemented a **fault-tolerant** firmware to automatically connect to local network during gateway failures, ensuring backup connectivity to **AWS IoT Core**.
- * Developed a **fleet-management dashboard**, offering access to device health, status, GPS, and other **telemetry data**.

- **Software Development**

- * Conceived an **EKG simulator** device for a **medical client**, enabling sales associates to demonstrate their cardiac monitor device in the field.
- * Upgraded an existing **Raspberry Pi**-based prototype to **ESP32** reducing per unit **cost** by **93.33%** while enhancing the capabilities of the unit.
- * Devised a web application with a **C++ backend**, hosting a local **web-server** for file management and supporting custom dataset uploads to enhance flexibility.

PROJECTS

CardVerse | **\$7,000 Innovation Competition Winner** | jatanjay.github.io/CardVerse

09/2022 – 05/2023

- Built a **machine** for **authenticating**, and **sorting 1000 Magic: The Gathering** cards, streamlining inventory management for professional collectors.
- Designed a **machine learning** algorithm to identify card defects with **97% accuracy**, effectively recognizing scratches, bends, and dents.
- Implemented an **image processing** pipeline achieving a **99% authentication accuracy** on industry-standard tests.
- Leveraged Jetson and RPi, to integrate a **3 axis robotic arm**, **cameras**, a **weighing scale** and a **lighting chamber** enabling precise card handling and examination.