AADI UMRANI

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Core Software Skills

- **Languages:** Flutter, Python, HTML, CSS, C++, Java, SQL, VTL, ReactJS, Express.js, Node.js
- **Tools:** VS Code, InfluxDB 2.0, MySQL, Grafana, AWS DynamoDB, AppSync, Lambda, EC2, MS Office, SolidWorks

Certifications

PCEP: OpenEDG Python Institute, **Introduction to Python:** IBMCEP, **Full Stack Development** (*In progress*), **Engineering Machine Shop Certification:** University of Waterloo, **Competent Communicator:** Toastmasters International

Work Experience

Software Developer	Escape	Jun 2023 – Aug 2023

- Developed a social media application using **Flutter**, resulting in a single codebase for both iOS and Android platforms, reducing development time by about 25%, which led to development time being saved.
- Designed and implemented the frontend using **Flutter.** Leveraging **Riverpod** for state management resulted in a 15% faster user interface rendering, and eliminated prop drilling, which led to a significantly smoother UI and better structured code.
- Incorporated a scalable backend with **AWS AppSync** and **DynamoDB**, achieving consistent loading times of under 450 milliseconds, regardless of database size, ensuring a seamless user experience and responsiveness.

Computer Vision Engineer	Autogenbot LLP	April 2023 – Aug 2023

- Engineered a robot computer vision program using **Python**, that detected, counted, and diagnosed fruits in a field, improving the yield estimate accuracy by about 20% compared to area-based estimation.
- Implemented the **YOLOv3**, and later a **YOLOv5** model to perform detection of different fruits. The model has a precision of 86.3% and a mAP of 86.5%, enabling highly reliable object detection and classification.
- Tested the program on a Raspberry Pi and later a Snapdragon 845 based robot. Optimized the program for lowering the CPU usage, resulting in a 40% increase in frame rate, and 5°C decrease in CPU temperature.

Projects

Booking App

- Developing a mobile and web application that manages a community hall's bookings.
- Utilized **Flutter**, a multi-platform development framework, ensuring a consistent user experience across platforms, and an access to a diverse widget library.
- Made use of **Cloud Firestore** for the backend infrastructure, providing scalability, real-time synchronization, and adaptability to evolving data needs in the ongoing development of the booking application.

To-Do Web Application

- Architected and implemented a high-performance **CRUD** application utilizing **ReactJS**, **Express.js**, and **Node.js**, enabling seamless management of a to-do-list.
- Utilized a locally hosted **MySQL** instance for data storage due to high connection speed, comparatively higher level of security, and the presence of a rigid schema. All this led to loading times of under 300 milliseconds.

Temperature and Humidity Monitoring

- Developed an IoT application that uploaded simulated sensor data to an **Influx DB 2.0** database stored on an **AWS EC2** instance running on the **Amazon Linux 2023** OS.
- Uploaded the **python** scripts to simulate and upload sensor data on the instance, used a cron job to automate the data upload from the EC2 instance. The localization of all tasks within the instance reduced data upload times by around 2-3 seconds.
- Utilized **Grafana** to create a dashboard to visualize the data, resulting in a 30% improvement in data interpretation quality over other comparable methods, like Power BI.

Education

University of Waterloo (Sep 2022 – May 2027), **Degree**: BASc Biomedical Engineering