

Ameen Pudhiyapura

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SUMMARY

Full-Stack Engineer and **former founder** who turns complex systems into delightful user experiences. With **8+** years building with NodeJS, ReactJS, and AWS, At **Safran**, I contribute to the architecture and development of an intelligent platform that processes real-time aircraft data using **Greengrass and other AWS Services to enable seamless cloud connectivity**. I hold a **Master's in Engineering Science** from **SUNY Buffalo** and have worked across leading aerospace and Fortune 500 e-commerce sectors. Passionate about innovation, I founded a startup to combat phone theft, blending technology with creative strategies to drive adoption. I take a hands-on approach to solving complex engineering challenges, whether it's building a microcontroller gadget, or designing scalable APIs. If it can be **built, optimized, or automated – I'm on It !** [\(MORE \)](#)

EXPERIENCE

Lead Engineer

QBurst Technologies Private Limited

January 2018 - Present, USA, California

- Worked with **\$10B+** global **Aerospace giant Safran**, leading the development of **Smartpipe**, an aircraft data connectivity platform. This platform leverages **AWS Greengrass IoT, Lambda, DynamoDB, Neptune DB, SQS, SNS, and Cognito** to securely connect aircraft systems (tails) to the cloud for real-time data processing and operations.
- Engineered **NodeJS/Go** back-end systems and **ReactJS** frontend for a **Fortune Global 500 retailer** including implementing CI/CD (Docker/Jenkins), configuring Akamai/Nginx, and optimizing EC2; achieved 40M+ monthly hits.
- Developed **React/Redux SPAs** for diverse clients, including major e-commerce players.
- Debugged APIs/services using shell scripts, Postman, Charles Proxy, and JMeter.

Co-founder and Director

IMEIfy Private Limited

July 2018 - January 2022, India, Kerala

- Co-founded and led a social impact startup, overseeing administration, development, marketing, and team growth. Scaled the team to 10+ members within 2 months.
- Developed and launched a pioneering product, achieving 10,000+ users within 3 months. Contributed to marketing strategies, packaging, and campaigns.
- Developed a full-stack application using NodeJS and ReactJS, enabling communication with IoT devices via MQTT.
- Designed and implemented IoT automation solutions for home and industries using ESP32, Raspberry and AWS Cloud.

Engineer R&D

Green turn labs Private Limited

July 2017 - January 2018, India, Kerala

- Developed firmware for Atmega microcontrollers used in smart energy meter IoT devices.
- Led IoT device brainstorming, PCB design, and software architecture, achieving a 2-week idea-to-prototype cycle.
- Designed and deployed a web portal (Bootstrap, PHP, MySQL) for manufacturing tracking, inventory management, and HR, reducing inventory wastage by 40%.

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EDUCATION

MS in Engineering science

University at Buffalo, The State University of New York • Buffalo • 2023 • 3.80

B.Tech Computer Science

Kannur University • Kerala, India • 2017

SKILLS

Language: JavaScript (ES6+), TypeScript, Go (Golang), Shell Script, Verilog

Front-End Technologies: ReactJS, Redux, Redux-Saga, Webpack, Jest, Selenium, WebdriverIO

Back-End Technologies: Node.js, RESTful APIs, API Gateway, NeptuneDB, Postman, Newman

Cloud & DevOps: AWS Services (Lambda, S3, API Gateway, Step Functions, IoT, Greengrass, DynamoDB), Jenkins, Docker, Nginx, Reverse Proxy, Akamai

Embedded Systems: Atmega, Arduino, Vivado, ESP32

MORE ON MY EXPERIENCE

Smartpipe IoT Platform:

- Worked with **Global Aerospace Giant Safran**, leading the development of **Smartpipe**, an aircraft data connectivity platform. This platform leverages **AWS Greengrass IoT** to securely connect aircraft systems (tails) to the cloud for real-time data processing and operations.
- Designed and developed multiple **serverless services** using **TypeScript**, integrating **AWS Lambda, DynamoDB, Neptune DB, SQS, SNS**, and **Cognito** to enable efficient data transfer, storage, and user authentication.
- Implemented services to facilitate communication with IoT devices using protocols such as **MQTT, REST etc**
- Built a **ReactJS-based frontend portal** to provide an intuitive user interface for monitoring, troubleshooting, and managing operations in Smartpipe. The portal includes features like real-time data visualization and user access control.
- Developed **RESTful APIs** in **TypeScript**, enabling secure and scalable communication between the IoT devices and cloud services.
- Designed and implemented a **role-based access control (RBAC)** system, enabling fine-grained access management for users and services based on their roles and responsibilities.
- Set up **multi-factor authentication (MFA)** using **AWS Cognito** to enhance security for system users and administrators.

Fortune 500 Retail e-commerce

- Developed several **REST API microservices** for a global site handling over **2 million hits per day**, using **TypeScript, Node.js, Golang, and PHP** to deliver robust and scalable backend systems.
- Designed and developed an **auth token exchange service**, providing a secure mechanism for API authentication across multiple microservices.
- Created a **backend-for-frontend (BFF) service** to reduce the number of API calls made by the frontend, consolidating and abstracting API logic for better performance.
- Implemented **social login** integration for SPAs, streamlining user onboarding with OAuth-based authentication.
- Containerized **NodeJSs applications** and **ReactJS-based SPAs** using **Docker**, ensuring environment consistency and simplified deployments.
- Implemented a high-performance React.js frontend, optimized for regions with low internet speeds to ensure smooth user experience
- Utilized **Redux, Redux-Saga, Thunk, Webpack**, and **Flow typed** for efficient state management and predictable data handling.
- Wrote comprehensive test cases using **JEST, Mocha**, and **Chai** to ensure system stability and reliability during rapid development cycles.
- Configured **Nginx** and **NJS** to act as a **regional router** for Single Page Applications (SPA), enabling faster content delivery tailored to regional needs.
- Worked on optimizing **Akamai** settings and minimizing **frontend bundle sizes**, resulting in reduced load times and improved user experience.
- Set up **CI/CD pipelines** using **Jenkins**, automating build, test, and deployment processes for consistent and timely releases.

Monitoring and Troubleshooting Tools:

- Designed and developed a tool to monitor the real-time status of microservices and their infrastructure layers, including **CDN, API Gateway, Load Balancer, and service layers**, enabling rapid debugging and fault resolution.
- Built the frontend for the monitoring tool in **ReactJS**, with **Nginx** and **NJS** as supporting proxy servers to handle routing.

API Documentation and Automation:

- Designed a tool that converts **Swagger** definitions into **Markdown** format for easier consumption by teams using **Slate**, with a built-in **code snippet generator** for improved usability for peer teams.
- Experience in API automation testing using **Postman Newman**, ensuring endpoint reliability across releases.
- Wrote shell scripts to automate API testing and integrate them into CI/CD pipelines.

Authorization Systems:

- Set up an **in-house Authorization Management System**, enabling secure role-based access for multiple clients. The system included features like dispatching client secrets securely and managing permission hierarchies.

Greenturn – Early-Stage Startup (Smart Energy Meters & IoT Home Automation)

- Joined as an **early employee**, contributing across **backend systems, firmware, and frontend portals**.
- Designed a **modular PCB layout**, splitting it into **three stackable sections** connected via headers, making it easier for technicians to service and replace individual parts instead of the entire board.
- Developed **firmware for Atmega microcontrollers**, powering smart energy meter IoT devices.
- Diagnosed and resolved **critical firmware bugs**, leveraging strong debugging and analytical skills.
- Led **IoT device prototyping**, streamlining **PCB design and software architecture**, and achieving a **2-week turnaround from concept to working prototype**.
- Built a **web portal using Bootstrap, PHP, and MySQL** to manage **manufacturing, inventory, and HR**, cutting inventory wastage by **40%** through better tracking and automation.
- Took a **hands-on role in both hardware and software development**, ensuring a seamless integration between IoT devices, backend infrastructure, and operational tools.