Johan Sebastian

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EXPERIENCE

Technology Lead & Co-Founder
Farm21   November 2024—Present, Kozhikode, Kerala, India

- Built a Firebase Realtime Database backend and integrated it with the Twilio API to send live soil-moisture data from ESP32 nodes, enabling users to monitor irrigation status and receive alerts in real time.
- Designed and fabricated a custom ESP32-based PCB shield that integrates environmental sensors, relay control, power-management circuitry, andan OLED display for in-field diagnostics.
- Deployed and maintained a live test node in Kasargode, Kerala for six months to evaluate climate-specific agricultural conditions, collecting data using Realtime DB and a Flash-based API that informed both hardware revisions and firmware optimizations.
- Presented early product demos at Ekasva, a university startup expo, generating interest from alumni and collecting initial user feedback on UX and feature priorities.
- Conducted feasibility research for indoor, container-based agriculture in the UAE, adapting Farm21's core sensing and control stack to arid-region constraints (high temperature, water scarcity, and controlled environments).

Project Intern
Aqua Middle East L.L.C.   May 2025—June 2025, Abu Dhabi, U.A.E.

- Supported the development of an upcoming IoT-based pool and water management system, enabling real-time monitoring, safety and control for smarter water use and maintenance.
- Assisted with the initial PCB fabrication process for the first prototype, learning the execution hands-on from the team.
- Integrated AI-driven n8n automations into team workflow and lead generation, improving efficiency and supporting better operational decisions.

PROJECT

Rainfall Probability Forecasting Using LSTM-Based Time-Series Modeling
National Institute of Technology Calicut · November 2025

- LSTM-driven rain prediction using Python and TensorFlow, integrating Farm21's integrated test node to collect real-time data, in order to generate data-driven rain probability forecasts from field humidity and temperature when compared with historic annual trends.

Talk To Your Reddit Posts
National Institute of Technology Calicut · May 2024

- Python program using Google Gemini API designed to create an LLM-based interaction with a reddit post, to streamline the process of summarizing and extracting valuable insights from Reddit posts.

EDUCATION

Bachelor of Technology, Electrical and Electronics Engineering
National Institute of Technology Calicut · Kerala · 2024-2028

Relevant coursework: Python Programming and Applications, Data Structures & Algorithms, Digital Circuits & Systems.

CERTIFICATIONS

CS50's Introduction to Artificial Intelligence with Python
Harvard edX · 2024

Introduction to Generative AI
Google Cloud · 2024

Introduction to Digital Marketing
Google · 2020

SKILLS

Programming: Python, TensorFlow, TinyML, C++, Arduino, Raspberry Pi, Keras, NumPy, Pandas

Leadership: Speaking, Product Development, Communication, Entrepreneurship