JOHANAN S. A.

Mechanical Engineering Student

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ABOUT ME

I'm a final-year Mechanical Engineering student with a strong interest in Product Design, CFD, ML, Automation & Web Development. I **enjoy building** systems that combine solid engineering with smart technology to solve real problems. I'm **curious** by nature, focused on **learning continuously**, and driven to turn practical ideas into useful, well-designed solutions.

EDUCATION

NATIONAL ENGINEERING COLLEGE, KOVILPATTI
B.E. Mechanical Engineering
2022 - 2026 (on-going)
CGPA: 8.00 (up to 6th Semester)

ST. ANTONY'S PUBLIC SCHOOL, PALAYANKOTTAI
Class 10: 83.6%
Class 12: 75.4%

SKILLS

Mechanical: CAD, CFD, Product Design, 3D Printing, Prototyping & Robotics

Software: Full-Stack Web Development, UI/UX Design, Problem Solving, VCS & Documentation

TOOLS & TECHNOLOGY

Mechanical Tools: SolidWorks, AutoCAD, Fusion 360 & ANSYS.
Electronics & Embedded: Arduino, ESP32, Raspberry Pi & MATLAB.
Web & Software Stack: TypeScript, React, Linux, Python & DL.

EXTRA CURRICULAR ACTIVITIES

- NEC Eco Club - Student Member
- NEC Auto Club - Student Coordinator
- Nellai Badmitton Academy - Club Member

INTERNSHIP EXPERIENCE

ISRO PROPULSION COMPLEX (IPRC), MAHENDRAGIRI

In-plant Trainee — **2025 (2 weeks)**

Gained hands-on experience with **propulsion systems**, testing operations, and high-precision industrial practices in Aerospace.

PROJECTS

AI-BASED, REALTIME CATTLE DETECTION AND RISK MITIGATION SYSTEM — **2025**

Built a **Deep Learning** system using **Raspberry Pi** and RPi GSC module for real-time detection with Firebase and a **React** dashboard.

CFD ANALYSIS OF TORROIDAL VS DJI DRONE PROPELLER (USING ANSYS FLUENT) — **2025**

Simulated airflow and noise of a DJI propeller, identified tip vortices as the main noise source, and compared SPL with toroidal propellers.

SMART WATER QUALITY MONITOR — **2025**

ESP32-based system measuring pH, turbidity, and TDS; real-time data pushed to **Firebase** with Flutter-based mobile Dashboard.

5-AXIS ROBOTIC ARM (FOR PICK & PLACE OPERATION) — **2024**

Built a **3D-printed** robotic arm using **Arduino** with continuous and positional servos, joystick-controlled for precise movement.

ML BASED PREDICTION AND OPTIMIZATION FOR ALUMINIUM WIRE ROD PRODUCTION — **2024**

Developed a deep learning model using **LSTM** and the **Firefly** Algorithm for process parameter optimization for NALCO, Odisha under SIH 2024.

RTC-BASED SOLAR TRACKING SYSTEM FOR SOLAR ENERGY FARMS — **2023**

Designed a dual-axis **solar tracker** using a mathematical model to compute solar and azimuth angles from **geographic coordinates**, eliminating the need for light sensors.

CERTIFICATIONS

- CSWA - Design
- CSWA - Sustainability
- CSWA - Additive Manufacturing
- MATLAB On-ramp Course
- Udemy - The Complete Web Dev. Bootcamp by Angela Yu

NPTEL COURSES

- Social Innovation in Industry 4.0 – Gold Medal & Top 5% Rank
- Product Design & Manufacturing – Silver Medal
- Technical English for Engineers – Silver Medal