

## Ranbeer Raja

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## Mechanical Engineering Student with Powertrain and System Development Experience

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### Summary

Mechanical Engineering student with hands-on experience in electric and combustion powertrains, system design, and software-integrated mechanical solutions. Proven ability in CAD modelling, Java-based GUI development, and Raspberry Pi-based network-attached storage (NAS) infrastructure. Combines technical acumen with teamwork, problem-solving, and system optimization skills.

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### Skills

- CAD & 3D prototyping (SolidWorks)
  - Java programming, Swing GUI and MySQL integration
  - Linux-based server setup, Docker, NAS infrastructure
  - Mechanical Testing and Data Analysis
  - Inventory Management System Design
  - System Security, Networking (Tailscale, CLI )
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### Experience

#### Powertrain Engineer

*Team ETA India, KJSCE*

10/2024 – Current | Mumbai, India

Worked on combustion and electric powertrain systems in student vehicle projects. Currently leading electrification efforts.

- **Design Review:** Evaluated technical documents for design compliance.
  - **Process Optimization:** Recommended workflow improvements using FMEA and test data.
  - **Cross-Functional Collaboration:** Worked with drivetrain, electronics, and chassis sub-teams.
  - **Testing:** Designed tests for transmission and powertrain systems.
  - **Fabrication:** Used 3D printing and machining tools for prototypes.
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## **Developer – Inventory Management System (Java + MySQL)**

01/2025 – 04/2025 | Personal Project

Designed a fully functional desktop-based inventory management system with real-time database integration.

- Created a **Swing-based GUI** for managing warehouse/shop items.
  - Developed **CRUD operations** for items using **MySQL + JDBC**.
  - Implemented sales logic, input validation, and visual feedback using JOptionPane.
  - Ensured secure SQL interaction with PreparedStatement.
  - Applied structured GUI layout with multiple JPanels, consistent styling, and usability features.
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## **Home NAS & Self-Hosting Infrastructure (Raspberry Pi 5)**

02/2025 – Present | Personal Lab

Converted Raspberry Pi 5 into a smart NAS and Docker-based hosting system with remote VPN access.

### **Raspberry Pi NAS Developer**

*Feb 2025 – Present*

- Built a Docker-based NAS with CasaOS, Nextcloud, and Cockpit on Raspberry Pi 5.
  - Configured remote access via Tailscale VPN and added firewall protection.
  - Integrated 1TB Kioxia NVMe via GeekPi M.2 HAT for high-speed storage.
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## **Education**

### **B.Tech. Mechanical Engineering [Expected in 04/2028]**

K. J. Somaiya College Of Engineering – Mumbai, India