Aryan Agrahari

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Professional Summary

Final Year Mechanical Engineering undergraduate with hands-on experience in **CAD Modelling, Mechanical Design, Industrial Automation, IoT, 3D Printing, and Manufacturing Processes**. Proficient in **SolidWorks, Autodesk Fusion 360, and ANSYS Workbench**, with industrial experience at **Robotics Era OPC Pvt. Ltd.** and **BHEL HERP**. Passionate about Product Development, Design Engineering, Manufacturing, and R&D, with experience in developing engineering prototypes, mechanical assemblies, and technical documentation.

Education

Bundelkhand Institute of Engineering & Technology, Jhansi
B.Tech, Mechanical Engineering | 2023 – Present
CGPA: 7.398/10

Radiant Central Children Academy, Jalalpur
Class XII (PCMB) | 2022
87.5%

Radiant Central Children Academy, Jalalpur
Class X | 2020
90.83%

Experience

Robotics Era OPC Pvt. Ltd., Gorakhpur | Engineering Intern – Robotics, Automation & CAD
May 2026 – Jul 2026

- Designed and developed CAD models, 3D-printed prototypes, and engineering components for industrial IoT and automation projects.
- **Led the CAD modelling of a large-scale physical master plan for the Dhuriyapar Area Master Plan-2041, contributing to the engineering design and fabrication of a Government Industrial Project for the Gorakhpur Industrial Development Authority (GIDA).**
- Worked on Industrial Automation, IoT systems, Engineering Fabrication, Prototype Development, and real-time project implementation.
- Gained hands-on experience in **microcontroller programming, sensor interfacing, industrial automation, and multidisciplinary engineering collaboration**.

BHEL, HERP, Tarna Shivpur, Varanasi | Summer Intern
Jun 2025 – Jul 2025

- Assisted in job setup, tooling selection, workpiece alignment, and clamping operations on the **TG25/3000 MARIO CNC Vertical Boring Machine** used for machining heavy engineering components.
- Studied CNC machining operations, manufacturing workflows, production planning, and quality control practices in a heavy engineering environment.
- Prepared technical documentation while gaining practical exposure to industrial safety, machining operations, mechanical assembly, and manufacturing process planning.

RoboKart | STEM Trainer & Lab Setup Associate
Apr 2026

- Established Robotics and Astronomy Laboratories in PM SHRI schools by installing, configuring, and commissioning STEM laboratory equipment.
- Delivered hands-on robotics and STEM training to **70+ students** and **20+ faculty members** across two PM SHRI schools.
- Conducted technical demonstrations and laboratory sessions to promote robotics, automation, and practical engineering concepts.

Projects

Go-Kart Chassis Design & Analysis | CAD, Vehicle Design

- Designed an HFKC-compliant EV go-kart chassis in SolidWorks using AISI 1018 steel tubing.
- Performed structural analysis in ANSYS and optimized the design through multiple iterations for strength and weight reduction.

Autonomous Obstacle Avoiding Robot | Arduino, Robotics

- Developed a four-wheel autonomous robot using Arduino Uno, ultrasonic sensing, and servo-based environmental scanning.

- Implemented obstacle detection and avoidance logic through integration of sensors, actuators, motor drivers, and embedded programming.

V12 Internal Combustion Engine Assembly | CAD, Mechanical Assembly

- Developed a 50-component V12 engine assembly with realistic piston-crank and valve train mechanisms.
- Conducted motion studies and assembly validation to ensure proper kinematic behavior.

Functional Horizontal Axis Wind Turbine Assembly | Mechanical Design, CAD

- Designed a 15-component HAWT assembly including blades, hub, nacelle, transmission system, and support structure.
- Performed motion studies and incorporated additive-manufacturing considerations to create a functional 3D-printable model.

5-Cylinder Radial Engine Mechanism | Mechanism Design, CAD

- Developed a fully constrained 5-cylinder radial engine assembly in Fusion 360 with realistic piston and connecting rod motion.
- Validated crankshaft rotation, piston reciprocation, and interference-free operation through motion analysis.

TECHNICAL SKILLS

- **CAD & Design:** SolidWorks, Fusion 360, CAD Modelling, Assembly Design, Weldments, Sheet Metal, Surface Modelling
- **CAE & Analysis:** ANSYS Workbench, Static Structural Analysis, Modal Analysis, Mesh Generation
- **Manufacturing & Drafting:** CNC Basics, GD&T, Technical Drawings, 3D Printing Fundamentals, Design for Manufacturing(DFM), Design for Assembly(DFA)
- **Core Mechanical:** Machine Design, Mechanism Design, Manufacturing Processes, Engineering Drawing
- **Programming Languages:** C, C++, Python
- **Tools:** MS Excel, MS PowerPoint, MS Word
- **Electronics & IOT:** Arduino Uno, ESP8266, ESP32, Sensor Integration, Relay Interfacing
- **Documentation:** Technical Documentation

POSITIONS OF RESPONSIBILITY

Joint Secretary, Automation & Robotics Club, BIET Jhansi *(September 2025–Present)*

• Coordinated robotics workshops, technical activities, and student participation in automation-related projects.

Coordinator, Training and Placement Cell, BIET Jhansi *(October 2024–Present)*

• Supported placement activities, student communication, and training programs.

Coordinator, Cultural Sub Council, BIET Jhansi *(October 2024–Present)*

• Assisted in planning and execution of cultural events, stage coordination, and student engagement activities.

ACHIEVEMENTS

- Secured 1st Position in the Inter-College MANAK Quiz Competition at MANAK Utsav 2025, conducted under the Bureau of Indian Standards (BIS) (2025)
- Completed Design Using Standards Workshop on the application of Indian Standards in engineering design (2025)
- Recognized as Event Coordinator for the successful planning and execution of Mech Motion 2.0 (2025)
- Received Certificate of Appreciation for Outstanding Performance in Mech-Motion Workshop (2024)
- Awarded Mr. Compere for excellence in public speaking, stage management, and event anchoring (2025)

CERTIFICATIONS

- ANSYS Formula SAE Chassis Analysis (2026)
- ANSYS BAJA SAE Chassis Analysis (2026)