Jagdeesh Meena

Mechanical Engineering
3rd Year Undergraduate

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Academic Qualifications

Year	Degree/Certificate	Institute	CPI/%
2022 - Present	B.Tech	Indian Institute of Technology, Kanpur	6.1/10
2021	RBSE(XII)	DS science academy Sr Sec School, Gangapur City	98.40%
2019	RBSE(X)	Nehru Public Sr Sec School, Suroth	88.67%

Work Experiences

Swiggy Ltd

- **Marketing Intern as Campus Ambassador.** *(Mar'24-June'24)*
  Manager: Ujjawal Agarwal, Marketing Team.
  - Worked on **Project: SDPO**
  - Implemented **Supply Demand Planning and Optimization strategies** for enhancing efficiency of sales at Swiggy.
  - Collaborated with a diverse **team of over 20 interns**, each managing connections with over **100 restaurants**.
  - Conducted **comparative analysis** of discounts aligning it with supply and demand, between Swiggy and other competing apps to **optimize market strategies, improve user experience** and **escalate sales**.

Key Projects

- **Course helper | Google Developer Groups** *(Dec'24- Jan'25)*
  - Developed a **dynamic website** using **React**, **Node.js**, and **PostgreSQL** to manage and explore courses easily.
  - Implemented secure user **authentication** with **JWT** and **bcrypt**, ensuring data privacy and user account safety.
  - Created **RESTful** APIs to support CRUD operations for courses, enabling efficient backend integration and data handling.
  - Leveraged **Material-UI** for building a responsive and visually appealing user interface, ensuring cross-device compatibility.
  - Configured **environment variables** and optimized architecture for deployment, ensuring **scalability** and **maintainability**.
- **Gesture and Voice Control System** *(Dec'24- Jan'25)*
  - Developed a **Gesture and Voice Control System** integrating **Azure Cognitive Services** for speech recognition and **MediaPipe** for gesture recognition, enabling hands-free control of applications and improving Human - Machine interaction.
  - Implemented a **Tkinter-based GUI** for managing services, enhancing **intuitive controls on Machine** and user interface.
  - Used **OpenCV**, **PyAutoGUI**, and **Tkinter** to control the cursor and perform clicks with **gestures** and **voice commands**.
- **Project Mentor | Roboconstruct: Build Your First Robot from Scratch | AME** *(Nov'24- Present)*
  - **Mentored** 10+ students in designing, programming, and assembling a Line follower Automobile robot from scratch.
  - Taught **3D modeling** concepts and techniques while assisting in the design and creation of advanced robot models using SolidWorks, integrating pre-existing components such as motors, sensors, and electronics to ensure efficient assembly.
  - **Instructed students about Arduino for programming, implementing logic for Line-following functionality**.
  - Guided the integration of the **L298 motor driver** for proper power distribution to the motors using a **9V battery**, supervised the **3D printing** and final assembly of the robot, and now we are working on **controlling** it through **gestures**.
- **Analysis Experimental Forces using Cutting Tool | ME361 Course Project** *(Oct'24- Nov'24)*
  - Conducted detailed precision machining experiments on CNC lathe, with a freshly prepared **tungsten carbide tool** and an **aluminum workpiece** to analyze **cutting parameters** and its impact on overall **machining performance**.
  - Accurately measured **cutting**, **thrust** and **radial forces** during machining operations using an advanced **dynamometer**, enabling precise evaluation of **force dynamics** and their influence on **machining stability** and **efficiency**.
  - Thoroughly analyzed experimental data to calculate **shear angles**, **cutting edge angles** and other critical parameters, designing **Merchant's Circle Diagram** to understand **force relationships** and **material deformation mechanisms**.
- **Efficiency Modeling of Hydrogen Fuel Cell Vehicles | ME301 Course Project** *(Oct'24- Nov'24)*
  - Developed a comprehensive thermodynamic model for Proton Exchange Membrane Fuel Cells (PEMFC) to meticulously analyze energy efficiency, overall system performance and environmental emissions for sustainable energy solutions.
  - Achieved a fuel cell efficiency of **82.8%** and Fuel Cell Electric Vehicle (**FCEV**) efficiency of **62.39%**, outperforming Internal Combustion Engine (**ICE**) vehicles, which achieve only 15–40% efficiency, highlighting the superiority of FCEVs. .
  - Simulated fuel cell systems using the advanced modeling capabilities of **MATLAB SIMULINK**, focusing on optimizing the efficiencies of critical components, power electronics and transmission systems to enhance performance and reliability.
- **Food waste management | Course Project (MBA-618)** (Report)
  Under : Prof. Veena Bansal, DoMS IIT Kanpur *(March'24 - April'24)*
  - Conducted a survey on **data collection** of food waste across mess of every **hall** in IITK.
  - Collaborated with **mess managers** to identify causes of **food wastage** and current **disposal methods**.
  - **Analyzed collected data** and discussed to pinpoint challenges including inconsistent waste volumes due to **student's busy schedules** hindering **NGO's** acceptance and dwindling animal health (**winter**) and preservation issues (**summer**).

Technical Skills

- **Programming Languages:** C, C++, HTML, CSS, JavaScript, MATLAB, Python
- **Tools:** React, Git/GitHub, SolidWorks, Fusion 360, Blender, Arduino IDE
- **Libraries & Frameworks:** React.js, Node.js, Material-UI, MediaPipe, OpenCV.

Positions of Responsibility

- **Captain - Weightlifting Team, IIT Kanpur** *(May'24 - present)*
  - **Captained** the weightlifting team to secure **second** place at **Inter IIT Sports Meet 2024**, competing against *all IITs*.
  - **Secured Championship** titles at **Udghosh,** Kanpur **District** Championship and runnerup **Sangram, IIT Roorkee**.
  - Coordinated with the GnS, IITK to organize **summer camp**, enhancing skills of current players and recruiting new talent.
  - Currently addressing team requirements for **daily practice** sessions, ensuring optimal preparation and performance.
- **Sport Secretary - Weightlifting, GNS IIT Kanpur** *(Sept'23-April'24)*
  - Coordinated with Team Captain to organize workshops aimed at improving team and skills enhancement.
  - Organized powerlifting and weightlifting competitions in multiple fests including Inferno, Udghosh, and Fresher's Inferno.
  - Played an active role in managing the team during daily practice and events such as District-level, Udghosh and Inter-IIT.
- **Organizer - Prabandhan'24(Annual Management Fest), IIT Kanpur** *(March'24)*
  - Mastered the planning, coordination, and execution of fest with impressive strategies focused at collaborative growth.
  - Coordinated with a team of 100+ volunteers to manage logistics, schedules, and participant activities, ensuring seamless event operations and Coordinated a security team for smooth functioning of the event at the Pronite ground and Auditorium.
- **Secretary - DesCon Society(Design and Construction Society)** *(June'23-April'24)*
  - Represented Descon Society during PG orientation sessions, introducing new students to society goals and activities.
  - Organized and facilitated workshops in collaboration with Leaders on software tools such as Fusion 360, Blender, and MATLAB, enhancing technical skills among members and fostering innovation in design and construction practices.
- **Senior Security Officer - Udhgosh, IIT Kanpur** *(Oct'23)*
  - Supervised a team of Security Officers (SOs) ensuring effective implementation of 100+ security protocols during fest.
  - Coordinated with team members and SIS to ensure smooth conduction of fest comprising 15+ events witnessing a footfall of 100k+ and participation encompassing 450+ colleges all over India.

Relevant Courses

Fundamentals of Computing - I	Fundamentals of Computing - II
Introduction to Electronics	Signal, Systems and Networks
Linear Algebra	Partial Differential Equations
Theory of Mechanisms and Machines	Dynamics
Thermodynamics	Mechanics of Solids
Nature and Properties of Materials	Primary Manufacturing Processes

Sports Achievements

- Awarded with **Bronze Medal in Inter IIT'24 - National level** Inter Collegiate Sports Meet in **Weightlifting event**
- Participated in **Inter IIT'23 - National level** Inter Collegiate Sports Meet in **Weightlifting event**
- Awarded with a **Gold Medal in Kanpur district Championship'23 & 24**- in **Weightlifting event**
- Awarded with a **Sliver & Bronze Medal in Udhgosh'24 & 23 National level** Inter Collegiate Sports Fest in **Weightlifting**
- Awarded with a **Gold Medal in Spardha'23 (IIT BHU)** - Inter Collegiate Sports Fest in **Weightlifting event**
- Awarded with a **Gold Medal in Fresher's Inferno'22** - Inter Hall Sports Fest in **Powerllifting event**
- Awarded with a **Silver Medal in Inferno'23** - Inter Hall Sports Fest in **Powerllifting event**