

# MD MAHMUDUL HASAN RANA

(+86)155271202396 | mahmudulhasanrana3@gmail.com  
Wuhan City, Hubei Province, PR China, 430068 Wuhan, China

## Objective

Motivated Mechanical Engineering student specializing in robotics and automation, eager to apply technical expertise and problem-solving skills to innovative projects. Passionate about engineering advancements and collaborative teamwork in dynamic environments.

## Education & Qualification

Hubei University of Technology  
BSc in Mechanical Engineering

Wuhan, China  
Mar 2021 – Dec 2024

- **Engineering Mechanics:** Designed a truss structure simulation to analyze load distribution and optimize material usage.
- **Thermodynamics:** Developed a Rankine cycle model to enhance steam power plant efficiency through energy analysis.
- **Fluid Mechanics:** Simulated airflow over an airfoil using CFD tools to study pressure distribution and lift generation.
- **Manufacturing Processes:** Created a prototype mechanical component using 3D printing and CNC machining techniques.
- **Mechanical Design:** Designed a gearbox system for optimal torque transmission, incorporating fatigue analysis.
- **Robotics & Automation:** Developed an Arduino-based robotic arm with real-time motion control and feedback integration.
- **Finite Element Analysis (FEA):** Simulated stress distribution in structural components using ANSYS for failure prediction.
- **Surgical Collaborative Robotics (Thesis Project):** Designed a robotic system for assisting in minimally invasive surgeries, integrating motion tracking and force feedback.

## Digital Skills

- Microsoft Word, Excel, PowerPoint, Access.
- Google Workspace (Google Drive, Google Docs, Google Slides, Google Sheets, Google Forms) / CAD - SolidWorks.

## Volunteering

HBUT

Wuhan, China  
Jul 2022 - Oct 2024

- Engaging in voluntary work is a rewarding experience that allows me to contribute to meaningful causes while developing valuable skills.
- For example, I could volunteer at a university event, assisting with organizing activities, guiding participants, or ensuring smooth operations. This role would enable me to support the community while honing my teamwork, communication, and problem-solving abilities.

## Communication And Interpersonal Skills

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- **Effective Communication:** Skilled in articulating ideas clearly and professionally, both in written and verbal forms, ensuring messages are understood across diverse audiences. Experienced in delivering presentations, drafting technical reports, and participating in group discussions.
- **Active Listening:** Proficient in understanding and addressing the needs of others through focused listening, fostering collaboration and building strong relationships.
- **Team Collaboration:** Strong ability to work effectively within teams, promoting cooperation, respect, and a shared commitment to achieving goals. Adept at resolving conflicts and maintaining a positive work environment.

## Language

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- Chinese (B1)
- English (Fluent)
- Bengali (Native)
- Hindi (A1)
- Urdu (A1)

## Interests

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I am a sports enthusiast with a deep passion for badminton and cricket. Whether competing in badminton tournaments or enjoying a friendly game of cricket, I thrive on the energy and camaraderie these sports bring. My dedication to badminton has earned me recognition, including prizes such as new equipment, showcasing my skill and love for the game.