

# AAYUSH BHATTA

079msmde001.aayush@pcampus.edu.np — Kathmandu, Nepal

## EDUCATION

### M.Sc. Mechanical Systems Design and Engineering

*Institute of Engineering, Tribhuvan University*

Recipient of IOE Graduate Entrance Merit Scholarship | GPA: 80.27%

Apr 2023 – Apr 2025

Lalitpur, Nepal

### B.E. Mechanical Engineering

*Institute of Engineering, Tribhuvan University*

Nov 2016 – Apr 2021

Lalitpur, Nepal

## PROFESSIONAL EXPERIENCE

### Structures — Design (Intern)

*Airbus India Pvt. Ltd.*

July, 2025 - Present

Bengaluru, India

### Teaching Assistant (Full-time)

*Institute of Engineering, Tribhuvan University*

May 2023 – May 2025

Kirtipur, Nepal

- Assisted in grading and evaluation for courses including Engineering Thermodynamics, Mechanics of Solids, and Finite Element Method.
- Conducted tutorials and laboratory sessions, supporting instruction in core mechanical engineering subjects.
- Contributed to preparation and revision of lab manuals and course materials.

### Mechanical Engineer (Full-time)

*National Innovation Center Nepal*

May 2022 – May 2023

Kirtipur, Nepal

- Contributed to the Drone R&D Department with focus on conceptual design and simulation of a fixed-wing medical delivery drone fuselage.
- Developed payload box prototypes using additive and subtractive manufacturing techniques (3D printing and laser cutting).
- Designed and fabricated an aluminum mold via casting for producing the drone fuselage using expanded polystyrene.

### Mechanical Designer (Full-time)

*Entegra Sources Pvt. Ltd.*

Jan 2022 – May 2022

Kathmandu, Nepal

- Designed mechanical components and systems using SOLIDWORKS and CATIA to meet client specifications.
- Performed structural, thermal, and CFD analyses using ANSYS to validate design performance.
- Collaborated with design teams to develop optimized solutions and improve design workflows.

### Service Engineer (Intern)

*Commercial Vehicle Department, Sipradi Trading Pvt. Ltd.*

Oct 2022 – Nov 2019

Lalitpur, Nepal

- Monitored and documented daily vehicle flow at the service center, identifying delays and inefficiencies in 20 service jobs.
- Communicated with customers to address service issues and ensure proper resolution.
- Prepared and presented a final internship report with recommendations for process improvement.

### Mechanical Designer (Intern)

*KMSS, Dairy Development Corporation*

Jul 2019 – Aug 2019

Kathmandu, Nepal

- Monitored and recorded operating parameters of boilers and refrigeration systems to ensure compliance with safety and efficiency standards.
- Designed an optimized layout of the milk filling and packaging equipment to improve accessibility, maintenance, and scalability for future expansion.
- Evaluated and recommended conveyor configurations and process flow paths to enhance production efficiency and reduce material handling time.

## PROJECTS

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### Reverse Engineering of a Commercial UAV

Analyzed aerodynamic performance and stability of a fixed-wing IC-engine pusher UAV with inverted V-tail using XFLR5.

### Design of Garbage Disposal Unit for Plastic Bottles

Engineered a multi-stage waste management prototype featuring a high-efficiency plastic shredding module for pre-crushed bottles.

## PUBLICATIONS

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- **Bhatta, A.**, & Bhattarai, S. (2025). Damage detection in composite beams using modal curvature-based techniques. *Journal of the Institute of Engineering*, (Accepted, in copyediting).
- **Bhatta, A.**, Shakya, S. R., Niraula, K., & Kafle, U. R. (2025). Impact of MnO<sub>2</sub> nanoparticles on combustion performance and emission characteristics of B20 biodiesel in a compression ignition engine. *Proceedings of the 11th Graduate Conference — Himalayan Knowledge Conclave (HKC)*, Kathmandu, Nepal.
- Chaudhary, R., Bhattarai, S., Poudel, L., Bhandari, N., **Bhatta, A.**, & Adhikari, K. (2024). Design, fabrication, and performance evaluation of a low-speed open jet wind tunnel for free flight testing. *Journal of the Institute of Engineering*, 18(1).

## VOLUNTEERING EXPERIENCE

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### Core-team Member

*Merit Nepal — Bagmati Province*

Aug 2022 - May 2023  
Kathmandu, Nepal

### General Member

*Merit Nepal*

Apr 2022 - Aug 2022  
Kathmandu, Nepal

### UN Online Volunteer

*UNDP Istanbul International Center for Private Sector in Development*

Aug 2021- Oct 2021  
Online

## SKILLS

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- **Computer Aided Design** — AutoCAD, SOLIDWORKS, CATIA
- **Computer-aided Simulations** — ANSYS, OpenFOAM, SimScale
- **Programming Languages** — C, Python, VBA, R
- **Fabrication** — Fused deposition modeling (ABS), Lasercutting and engraving (RDWorks)
- **Language Skills** — IELTS(band 7.5), GRE (164Q, 153V)

## SPECIAL TRAININGS & CERTIFICATIONS

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- Assisted in conducting a 5-day training program titled "Laboratory Training on Symbolic Computation with Maple for Engineering Problem Solving," organized by the Department of Mechanical and Aerospace Engineering, Pulchowk Campus, and funded by the University Grants Commission, Nepal.
- Completed the online course **Python Data Structures** — University of Michigan (Coursera)
- Attended the **3D Printing Workshop** — jointly conducted by Nepal Academy of Science and Technology (NAST) and Innovation Ghar Nepal
- Completed a **6-day MATLAB Course** — organized by the Society of Mechanical Engineering Students (SOMES), Pulchowk Campus