RAMESH BHANDARI

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CAREER OBJECTIVE

To secure a challenging and rewarding position as a mechanical engineer, where I can utilize my strong analytical and problem-solving skills to contribute to developing, improving, and producing innovative products while continuously learning and growing as a professional in the industry.

EDUCATION

Bachelor's degree in mechanical engineering, specializing in Design and Manufacturing
Kathmandu University, Dhulikhel, Kavrepalanchok. CGPA: 3.2/4

10+2, Higher Secondary Education Board (HSEB)
Liverpool International College, New Baneshwor, Kathmandu, 77%

School Leaving Certificate
Namo Buddha Higher Secondary English Boarding School, Shankhu-7, Kavre, 81%

SKILLS AND INTERESTS

Skills	Research and Analysis, Proficient in mechanical drawing using Computer-Aided Design software (Solidworks), Experience in 3D printing and prototyping, Competent skill in Ansys (Static structural (2D) and Fluent), Documentation skills, Workshops skills, Excellent communication, Supervision/Leadership, and collaboration abilities.
Interests	Computer-Aided Design, Research & Analysis, Energy Engineering , Li-ion Battery
Design Software	SolidWorks, AutoCad, PTC Creo, ANSYS.
Programming	MATLAB.
Platforms	MS Office, LaTeX.

RELEVANT COURSEWORK

University Courses	**Online Courses**
Computer-Aided Design	Geometric Dimensioning and Tolerancing (GD&T): Basics
Finite Element Method	Mastering ANSYS CFD
Manufacturing I and II	Learning SOLIDWORKS: For Students, Engineers, and Designers
Machine Design I and II	Exploratory Data Analysis with MATLAB
Theory of Machine	Python for Everybody

EXPERIENCE

Yak Brewing Company Pvt. Ltd June, 2025 - February,2026
Jr. Executive Maintenance Engineer

- Perform time-based maintenance by applying different approaches like planned/scheduled preventive maintenance, Autonomous, and corrective maintenance.
- Mobilize the maintenance team and execute the prevention measures.
- Inventory management and Procurement.
- Participate in project planning, feasibility studies, and system upgrades.

- **Key Projects**
- **Utility Tank Installation Project:**
  Planned and executed the installation of a new utility (UT) tank, including selection of instruments and sensors, preparation of technical layouts, and coordination with suppliers and contractors.
- **Malt Mill Expansion Project:**
  Conducted field measurements, prepared AutoCAD layouts, and managed material estimation and procurement for expansion works involving piping, bends, bucket elevators, grist bin, and related components.

Project 22-05 lab, Kathmandu University June,2023 - June, 2025
Research Assistant

- Lead the research on Lithium-ion battery.
- Carried out the research in the design of the battery thermal management system that utilizes different concentrations of Ethylene Glycol and water, writing the draft for publication, and supervising undergrad projects affiliated with the lab.
- Conducted literature survey for various coating strategies for enhancing mechanical strength, reduction in polysulfide effects, and improvement in conductivity in Lithium-Sulfur batteries.
- Administered literature research for Zn-MnO_2 batteries to improve battery electrode stability by reducing phase transition-induced cracking and capacity deterioration by mimicking the natural design from exoskeletons, honeycomb frameworks, and nacre-like structures.

L.I. Service Center Pvt. Ltd (Hyundai Authorized) Jan 2023 - Apr 2023
Service Engineer Intern

- Diagnosed the vehicle issues through customer descriptions and initial inspections, then communicated these technical findings to relevant service technicians.
- Developed and provided detailed repair estimates, including parts, labor, and time required, based on diagnostic reports and technical assessments.
- Utilized standard maintenance tools and acquired proficiency in fundamental maintenance procedures for internal combustion and electric vehicles.
- Managed and maintained the inventory of spare parts, ensuring optimal stock levels to meet workshop demands.
- Sourced and verified high-quality replacement parts, coordinating with suppliers for timely procurement.

PROJECTS

Earth-Air Cooling for the community-based System- A Case Study Sep 2022-June 2023
Major Project *Supervisor: Er. Malesh Shah*

- Conducted a thorough survey of the Budhanilkantha building in Kathmandu to accurately assess the energy needs for cooling during summer.
- Developed a cooling solution that was able to reduce the cooling load of 53.6 KiloWatt, which involved creating a heat exchanger that utilizes geothermal energy.
- Simulated room environments to monitor temperature variations before and after installing the heat exchanger, as well as analyzed the relationship between various parameters like diameter, velocity, pressure drop, and the Nusselt numbers to develop an optimized equation.
- Achieved 33% reduction in temperature, after installing the Heat Exchanger.

Study and Optimization of back pressure of Automobile Muffler Nov 2021-Jul 2022

- Literature review of various optimization methodologies and development of an optimization methodology was done to reduce back pressure.
- Market survey of different kinds of available mufflers and created models based on common patterns was conducted.
- Optimized back pressure by changing various parameters like the diameter of perforated holes, inter-distance between them, and the number of perforated holes.
- Overall, a 14.8% reduction in the back pressure of the muffler was achieved.

Design and Fabrication of Plastic Shredder Oct 2019 - Aug 2020

· Studied the impact of plastic on the environment, researched plastic waste recycling methods, calculated various design parameters required, designed a working model in SolidWorks, fabricated, and demonstrated the outcome.

Design and Fabrication of Rocker Bogie Feb 2019 - Aug 2019

· Fabricated and demonstrated the working prototype of a rocker-bogie using hands-on workshop skills and Arduino programming.

PUBLICATIONS

· **Bhandari, R. (2025)**. Coating strategies for enhancing cathode stability in lithium-sulfur batteries. *Critical Reviews in Solid State and Materials Sciences*, 1–95. https://doi.org/10.1080/10408436.2025.2509647 .

· **Bhandari R.**, 'Bioinspired design strategies for high-performance Zn-MnO_2 batteries', Applied Energy, vol. 393, p. 126140, Sep. 2025, doi: 10.1016/j.apenergy.2025.126140.

· **Bhandari, R**., Adhikari, N., 2024. A comprehensive review on the role of hydrogen in renewable energy systems. International Journal of Hydrogen Energy. DOI: 10.1016/j.ijhydene.2024.08.004.

· **Bhandari R**. Sustainable cooling solutions for building environments: A comprehensive study of earth-air cooling systems. Advances in Mechanical Engineering. 2024;16(9). DOI: 10.1177/16878132241272209.

· Adhikari, N., **Bhandari, R**., and Joshi, P. (2024). Thermal analysis of lithium-ion batteries in electric vehicles using different cooling mediums. Applied Energy, 360, 122781. DOI: 10.1016/j.apenergy.2024.122781.

LICENSE AND CERTIFICATION

Certificate for Registration of General Registered Engineer
Nepal Engineering Council

· Registration Detail: **Mechanical Engineering-79046**

Exploratory Data Analysis with MATLAB
MathWorks Training via Coursera

AWARDS AND ACHIEVEMENTS

· School-level volleyball and table tennis champion

MEMBERSHIP

· Nepal Engineers' Association
· Association of Mechanical Engineers(AMES)
· Amnesty International

DECLARATION

I hereby declare that the information provided is accurate to the best of my knowledge and belief.

REFERENCE

Available upon request.