Krishna Gupta

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Education

Pulchowk Campus, Tribhuvan University — Lalitpur, Bagmati
Bachelors in Mechanical Engineering- 75.5% — *May 2021 - April 2025*

New Horizon College — Butwal, Lumbini
NEB Intermediate level- 3.71/4.00 GPA — *2018 - 2020*

Activities

CFD analysis of cavitation in centrifugal pump — *June 2023 - August 2023*
Project

- Created the geometry of centrifugal pump using Solidworks
- Performed two phase simulation of centrifugal pump in Ansys- CFX
- Investigated cavitation by varying speed, suction pressure and blade angle.

Voice Biometric Authentication using Python — *May 2024*
Hackathon Project

- Used clustering algorithm for classification of individual voice based on spectrogram
- Explored different algorithms and libraries of machine learning and sound analysis

Use of Acoustic Metamaterial for noise reduction — *June 2024-April 2025*
Final Year Project

- Collected data of noise level of different noisy areas of Kathmandu valley
- Explored the concept of metamaterial both acoustic and electromagnetic
- Studied and worked on different designs of acoustic metamaterial for attenuation of noise from lawnmower.
- Simulated the designs in COMSOL Multiphysics using pressure acoustic-frequency domain based on Helmholtz equation
- Performed parametric optimization in COMSOL and 3D printed the optimized design
- Fabricated the impedence tube(experimental setup) and performed experimental testing
- Successfully attenuated the noise of lawnmower by 14 dB with 52% openness ratio.

Design and Prototyping of Wheelchair Assistive Devices — *Feb 2025*
Assistive Device Makeathon by Asian Development Bank(ADB), Japan Fund for Prosperous and Resilient Asia and the Pacific(JFPR)

- Interviewed the need knower suffering spinal chord injury to know her story and the problem she is facing
- Designed and prototyped a gripper cane
- Presented a cost effective idea of solving the ascending problem faced by the client due to highly steep ramp.

Trainings and Certifications

GLEE Remote Workshop *May 2022 - Sep 2023*
Colarado Space Grant Consortium

- Learned about and worked with Arduino, Solar Panels and Power Managemnet, Temperature sensor, Accelerometer sensor, Magnetometer sensor, Capacitive sensor, Thermopile sesor and RF communication
- Performed final simulation testing on arduino based LunaSat model working with multiple sensors at the same time
- Understood the planning it takes to design a science case mission and/or study and potential areas of research on moon
- Supported by NASA's Artemis mission, GLEE aims to land LunaSats configured by successful teams including ours on the moon to conduct distributed science and technology missions.

Python Coding & Programming *Nov 2023 - May 2024*
Samsung Innovation Campus

- Focused on strong foundation of Python
- Learned about data structures & algorithms and best practices for data analysis

Machine Learning with Python *Dec 2023 - April 2024*
Coursera

- Studied modern machine learning concepts, including supervised learning (linear regression, logistic regression, decision trees), unsupervised learning (clustering).
- Learned some of the best practices for building machine learning models
- https://coursera.org/verify/UEHNK9LKWYBT

Internship *Sep 2024 - Oct 2024*
Varun Beverages Nepal Pvt. Ltd., Nawalparasi

- Gained hands-on experience in production line operations, utility management, and maintenance of advanced machinery, including high-pressure compressors and refrigeration systems.
- Successfully identified and resolved technical issues in equipment and processes, ensuring optimal performance and reducing downtime.
- Collaborated with multiple departments, such as utility, maintenance, and quality control, to streamline workflows and enhance overall operational efficiency.

Internship *Apr 2025 - Jun 2025*
TEAMS-BCPL JOINT VENTURE, Kathmandu-11

- Worked as a Mechanical Engineer in the construction of DEWATS at Hanumanghat(1 MLD) and Gokarn(3 MLD)
- Acquired hands on experience in mechanical design,including process design calculation, instrumentation systems, pump selection, and valve scheduling.

Skills

Technical: SolidWorks, AutoCAD, ANSYS, COMSOL Multiphysics, Python, Machine Learning, Arduino, Matlab, Maple, Advance Excel, Latex

Language: Bhojpuri(Native proficiency), Nepali (Bilingual proficiency), English (Full professional proficiency)

Research Interest

- Energy Harvesting
- Acoustic Metamaterial
- Multidisciplinary Optimization
- Bio-inspired design

Extra Curricular Activities

Hult Prize 2022   *May 2022*
Regional Level Contestant

- Worked as a team on the idea of creating useful products from agricultural wastes with the theme "Getting the World back to Work".
- Our idea reached upto Regional Summit held in Islamabad, Pakistan.

Math and Physics Society, Pulchowk   *Nov 2022 - Nov 2024*
Physics Coordinator, Founding Member

- Served as an executive member of the inaugural committee, contributing to the establishment of the society.
- Organized the Math-Physics Olympiad and Nepal's first-ever Integration Bee, now recognized as an annual flagship event.
- Designed and curated challenging physics problems for the Olympiad, ensuring diverse difficulty levels and conceptual coverage.
- Mentored junior members, promoting leadership and problem-solving skills within the society.

Nepal Terai Bidyarthi Navajagaran Sangh   *June 2023 - June 2024*
Vice-President

- Developed leadership and managerial skills by organizing events such as Math Hunt, workshops, and the Grand Saraswati Puja 2080.
- Promoted the rich culture and heritage of the Madhesi community, advocating for a marginalized group in Nepal's southern plains.
- Engaged with prominent personalities, including celebrities, politicians, alumni, and experts in sociology and literature during various events and forums.
- Coordinated event logistics, volunteer management, and community outreach to ensure successful program execution.
- Facilitated workshops and discussions aimed at empowering students and promoting cultural awareness.