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EDUCATION

Institute of Engineering, Thapathali Campus — Kathmandu, Nepal
Bachelors in Mechanical Engineering — [Nov '17 – June'22]

WORK EXPERIENCE

Teaching Assistant | Institute of Engineering, Thapathali Campus — [Nov'2022-Present]
- Assisting the Professor in assessment of the class under the Department of Automobile and Mechanical Engineering
- Managing and evaluating a batch of 23 undergraduates in the Operation Research/ Management Science lab

Research Assistant | Energy System Research Lab — [Mar'22-Present]
- Mathematical Modelling-Reevaluated the equations from the final year project and rebuilt a mathematical model to determine the optimal locations of charging stations along with the optimal battery capacity while minimizing the total cost
- Created a dynamic model varying the traffic density every 10 mins in the valley at 3 different temperatures
- Formulated mixed integer linear programming model using Python and Google OR-Tools to find the optimal location for charging stations within the region and the optimal battery capacity for the electric bus
- Presented the report on final year project 'Locating the optimal EV charging stations for public vehicles' as presenting author on the '9th National Conference on Science and Technology' organized by Nepal Academy of Science & Technology (NAST)

Design Intern | Saral Urja Pvt.Ltd — [May'21-July'21]
- Studied solar policies issued by the government and the equipment that can be used for solar grid design in Nepal
- Designed prototypes for solar water heater and solar grid system using PVsyst and Staddpro

Manager, Social Media | Nepal Economics Olympiad (NEO) 2020 — [Dec'19-Feb'20]
- Publicized the Nepal economics olympiad through various social media platforms enhancing the event reach by 30%
- Created and reevaluated the proposals for various competitions to increase the NEO awareness in the colleges all over Nepal
- Organised interactive sessions for 100+ participants helping them get comfortable with the NEO environment

KEY PROJECT

Locating the optimal EV charging stations for public vehicles | *Guide:Dr Khem Gyawali* — [Jun'21-May'22]
- Conceptualized a mathematical model to determine the optimal locations of charging stations while minimizing the total cost.
- Analysis of energy consumption of four popular bus types BYDK9, Tata Star Bus, Volvo 7900, Olectra C9 at 3 different temperatures (0,15 and 30 degrees)-Analysed the energy consumption of 4 major EV bus types at 3 different temperatures.
- Used python to find the optimal locations for charging stations inside Kathmandu valley in cplex library- Formulated integer liner programming model using Python and cplex to find the optimal location for charging stations within the region.

Nepal Stock Exchange Market Analysis | *Coursework Project* — [July'21-July'21]
- Analysed stocks of 20 companies from 4 different sectors listed on Nepal Stock Exchange (NEPSE) to find relationship parameters between varied sectors over a period of time
- Forecasted the stock prices using historic short-term trading data using crystal-ball predictor in Ms-Excel with 80% accuracy
- Performed Monte Carlo Simulation for risk analysis to determine the certainty of the forecasted profit received per share.

Music Genre detection | *Self Project* — [Mar'21-May'21]
- Classified raw audio samples into **10** different **genres** using audio features like MFCCs, Chroma energy Normalized, etc.
- Engineered a machine learning model using PCA, ANN & KNN to detect the genre of given audio with 75%+ Accuracy

COMPETITION

Rowboatics Compettition | *TechFest, IIT Bombay* — [Jan'20]
- Led a team of four to design and fabricate an RC boat using electrical and mechanical concepts
- Secured first position among 40+ teams in the Rowboatics competition organized by Techfest, IIT Bombay

Jigyasa | *Institute of Engineering, Thapathali Campus* — [Feb'19]
- Fabricated a prototype using steel and plywood and powered by a motor to showcase the box shifting mechanism - Implemented box shifting mechanism to fabricate a physical prototype
- Demonstrated the project in the technical fest of IOE, Thapathali campus (Jigyasa).

MECHTRIX | *Institute of Engineering, Pulchwok Campus* — [Jan'19]
- Analyzed the damaged go-kart and found out the shortcomings - Repaired and remodeled a damaged go-kart
- Ranked 2nd in the go-kart race held in Annual mechanical fest (MECHTRIX) IOE, Pulchowk Campus

AT-Hackathon | *Institute of Engineering, Thapathali Campus* — [June'18]
- Participated in AT-HACKATHON 2018 conducted by disaster hack and secured 3rd position among 50+ teams
- Used rack and pinion mechanism to create an extendable prosthetic arm for differently abled people titled **'Helping hands'**

POSITIONS of RESPONSIBILITY

Executive Member | *Robotics & Automation Centre, IOE, Thapathali Campus*   [Dec'18-Mar'22]
- Selected as an executive member of Robotics and Automation Centre (team of 42) among 1200+ students
- Organized 9 different events catering to 1200+ students in IOE, Thapathali Campus
- Elected as a financial head during final for robust display of budgeting and leadership skills in junior years.
- Mentored a team of 10 juniors to improve their fabrication and 3D modeling skills

Class-Representative (CR) | *Department of Mechanical Engineering, IOE, Thapathali Campus*   [Dec'17-Mar'22]
- Represented a batch of 48 students for four years and acted as a link between them and the department
- Chairperson of the welcome program organized for juniors during the second year.

EXTRACURRICULARS

Cultural	• Participated in the storytelling event organized by Thapathali Literary Club (2018) • Performed a Nepali Dance in International Teenagers Olympiad in the cultural night representing Nepal (2015) • Participated in a school play '**Major Barbra**' as a stage crew. (2015)
Social	• Involved in Library establishment program in 'Shree Janjyoti Madhyamik Bidhyalaya', Lamjung & 'Shree BP Sanskrit Madhyamik Bidhyalaya', Solukhumbu (2017/2016) • Organized a Paralympics competition for differently abled people as a member of Social Service Club. (2016)
Trainings/ Certificationsl	• Training on "Boiler Saftey & Operation Management" organized by Occupational Saftey and Health Centre under Government of Nepal Ministry of Labour, Employment and Social Security (2021) • Training on Ansys organized by 'Automobile & Mechanical Engineering Students' Innovative Nexus' (AMESIN), Thapathali Campus (2021) • 'The Power of Macroeconomics:Economic Principles in Real World' by University of California, Irvine (2020) • 'Design Thinking for Innovation' authorized by University of Virginia. (2020) • 'Programming for Everybody (Getting Started with Python) ' authorized by University of Michigan (2020)
Miscellaneous	• Master of Ceremony for the "12th IOE graduate conference" hosted by IOE, Thapathali Campus (2022) • Represented the Department of Automobile & Mechanical Engineering on the 3rd year Industrial Visit for 45 students as their team leader. (2022) • Tutored school students from grades 7-12 in Mathematics and Science as a part-time job. (2017-2022) • Represented the institute basketball team on an inter-institutional level (2018-2022) • Volunteered in organizing 'World Robotics Olympiad' organized by STEM Foundation Nepal. (2018) • Selected as a representative from Nepal to participate in 'International Teenagers Mathematical Olympiad' held in Sungai Petani, Malaysia (2015)
Skills	**Technica**l: Python, OR-Tools, CPLEX Optimization Studio/Library, Numpy, Pandas, Ms-excel, Crystal Ball Si, Solver Add-in, Solidworks, Ansys, PVsyst **Other :** Mathematical Modelling & Optimization, Statistical Analysis, Numerical Competence