# Bibek Shrestha

+977 9860705981 bibeek02@gmail.com **Bibek: Linkedin** **Bibek: Website**

## Education

**Tribhuvan University, IOE, Pulchowk Campus** Nov 2019 – May 2024
*Bachelor of Mechanical Engineering (74.65 %)* *Lalitpur, Nepal*

- **Elective I:** Heating, Ventilation, and Air Conditioning
- **Elective II:** Refrigeration
- **Elective III:** Building Services

**Xavier International College, NEB** 2017 – 2019
*+2 Science, Physical (CGPA: 3.39 / 4.00)* *Kathmandu, Nepal*

## Experience

**GreenTech Nepal Pvt.Ltd** Oct 2023 – Dec 2023
*Research and Development Engineer Intern* *Lalitpur, Nepal*

- Conducted a literature review on heat pump dryer systems for agricultural products and designed a custom system for drying oyster mushrooms, considering optimal temperature, humidity, and product attributes.
- Selected components like heat exchangers, compressors, and evaporators based on performance, cost, and compatibility to create an efficient heat pump dryer tailored to the mushroom drying process.
  **Learn more**

## Projects

**Design and fabrication of manufacturing machine for Bamboo panel production process.** | *Mechanical Design, Structural Analysis, Fabrication Technique* Jun 2023 – Apr 2024

- Developed and constructed a specialized manufacturing machine for bamboo panel production, featuring automated adhesive application, mat formation, and hydraulic pressing with integrated heating elements.
- Conducted thorough strength testing to assess the structural integrity, durability, and versatility of the bamboo panels for diverse applications.

**Go-Kart (FireBall2.0)** | *Mechanical Design, Structural Analysis, Fabrication Techniques* Jan 2024 – Feb 2024

- Design, analysis and fabrication of a chassis to house a potent 150cc four-stroke bike engine, achieving top speeds of up to 85 km/hr.
- Incorporated adjustable camber angle and chain adjustment features for precise handling customization enhancing overall performance on the racetrack.

**E-Bike** | *Metal Fabrication, Electric Motor, Wiring Harness* Apr 2017 – Jun 2017

- Fabricated a robust chassis to ensure durability and safety, employing hands-on fabrication techniques.
- Integrated a 48V 500W brushless hub motor and compatible controller, achieving smooth propulsion and enabling a top speed of 40 km/hr with a mileage of 40-60 km/hr.

**Three Wheeler Hybrid Car** | *Hybrid Electric Vehicle, Internal Combustion Engines* Oct 2018 – Feb 2019

- Developed a versatile three-wheeler hybrid car capable of operating in both petrol and electric modes.
- Integrated a 125cc 4-stroke bike engine alongside a 750W BLDC motor, allowing users to choose between traditional combustion power and eco-friendly electric propulsion based on preference and driving conditions.

**SuffoSafe: Automatic Bathroom Smoke Evacuation System** | *Arduino* Mar 2022 – Mar 2022

- Led the fabrication of SuffoSafe, a safety solution prompted by a suffocation incident, swiftly removing excess smoke to ensure people's safety.
- It aims to enhance bathroom safety by preventing suffocation accidents caused by poor ventilation, detecting and mitigating smoke buildup effectively.

**Go-Kart (FireBall)** | *Metal Fabrication, IC Engine* Oct 2022 – Jan 2023

- Constructed a high-performance go-kart tailored for racing purposes, equipped with a potent 180cc four-stroke bike engine.

- Achieved impressive speeds of up to 75 km/hr, showcasing superior acceleration and handling characteristics on the racetrack.

**Go-Kart** | *Metal Fabrication, IC Engine* Nov 2019 – Jan 2020

- Constructed a go-kart for racing purposes, equipped with a 125cc four-stroke bike engine.
- Achieved speeds of up to 40 km/hr.

**Design of Coldstore** | *Cooling Load Calculation, Refrigeration Equipment Selection* Feb 2024 – Mar 2024

- Designed a seed potato cold store with a focus on maintaining optimal storage conditions through calculations of cooling loads, accounting for insulation, ambient temperature, desired storage temperature and humudity.
- The refrigerated equipment was chosen based on the estimated cooling load and storage requirements, with an emphasis on energy efficiency and efficient temperature control to preserve seed potatoes.

**Design of Firefighting System** | *System Design, Hydraulic Calculations, Technical Analysis* Feb 2024 – Mar 2024

- Designed a comprehensive firefighting system for the building, incorporating both fire sprinklers and fire hydrant standpipes strategically positioned for maximum coverage and efficiency in suppressing fires.
- Conducted hydraulic calculations to optimize water distribution and pressure within the fire sprinkler and hydrant standpipe systems

**Air Conditioning: Cooling Load Calculation** | *Cooling Load Calculation* Jul 2023 – Aug 2023

- Conducted comprehensive calculations to assess the heating load of the building, considering factors such as insulation, ambient temperature, and desired room temperature.
- Plan layout of split AC system in multistory building.

**Project Portfolio: Click here**

## Honors and awards

**Go-Kart League Winner (MechTRIX 2080)** | *SOMAES, IOE Pulchowk* Feb 2024

- Led the winning team ”FireBall 2.0” in the go-kart race organized by SOMAES during MechTRIX 2080.
- FireBall 2.0 with 150cc four-stroke bike engine, achieving an impressive top speed of 85 km/hr and demonstrating superior performance on the racetrack.

**3D Design Hackathon 2nd Runner Up (MechTRIX 2080)** | *SOMAES, IOE Pulchowk* Feb 2024

- Developed a fan-shaped automatic gate consisting of four sub-panels that operate using a counterclockwise mechanism, optimizing energy efficiency and reducing mechanical stress.

**Go-Kart League Winner (MechTRIX 2079)** | *SOMAES, IOE Pulchowk* Jan 2023

- Led the winning team ”FireBall” in the go-kart race organized by SOMAES during MechTRIX 2079.
- FireBall with 180cc four-stroke bike engine, achieving an impressive top speed of 75 km/hr and demonstrating superior performance on the racetrack.

**+2 B.E. Design Winner (MechTRIX X)** | *SOMAES, IOE Pulchowk* Jan 2019

- Presented a Three Wheeler Hybrid Car project with integrated Arduino and sensor technology, showcasing advanced functionalities.
- Implemented comprehensive safety and security features including GPS tracking, alcohol detection, obstacle detection, and alert systems to enhance driver safety and reduce collision risks.

**+2 B.E. Design Winner (MechTRIX 8.0)** | *SOMAES, IOE Pulchowk* Feb 2018

- Presented an e-bike project featuring advanced functionalities integrated using Arduino and sensor technology.
- Upgraded the electric bike with a smart helmet, GPS tracker, and alcohol detector for enhanced safety and usability.

## Training and Certifications

**Hardware Fellowship Workshop** | *LOCUS* Dec 2019

- A 10 Day Arduino workshop and crash course in electronic hardware design.

**International Astronomical Search Collaboration** | *Pan-STARRS* Sep 2018

- Participated in the International Astronomical Search Collaboration, a prestigious program focused on the observation and analysis of near-Earth objects (NEOs) and main belt asteroids.

## Technical Skills

**Languages**: English, Nepali

**Data Analysis**:Microsoft Office (Excel)

**CAD and Simulation**:Solidworks, AutoCAD, ANSYS

**Workshop Tools**: Lathe, Welding, Grinder, Driller