

BISHAL ADHIKARI

+977 9860895124 | 076bie011@tcioe.edu.np | [Professional Website](#)

 [LinkedIn](#) |  [WinnerBishal](#)

Panauti, Nepal

EDUCATION

• TRIBHUVAN UNIVERSITY

Thapathali Campus, IOE

2020 - 2024

Kathmandu, Nepal

- Bachelors' Degree in **Industrial Engineering**

SKILLS

- **Programming** : Python, MATLAB, ROS2
- **Design & Manufacturing**: Solidworks, Fusion 360, 3D Printing, Ansys, Laser Cutting
- **Research Skills**: Data Collection, Data Analysis, Literature Review, Report Writing (**LaTeX**)

PROJECTS

• Tiago Robot Localization, Mapping and Path Planning in Webots

February 2024

Tools: Python, Webots



- Implemented odometry based **localization** algorithm for a two wheeled robot in Webots
- Implemented **LiDAR** based environment mapping using Tiago, a two wheeled robot
- Implemented **RRT and A*** in python and integrated with Webots for path planning
- Designed Behavior Tree structure to integrate localization, mapping and path planning modules

• Design, Fabrication and Testing of an Industrial Delta Robot for Pick and Place

July 2023 - December 2023

Tools: Python, ROS, Arduino, Solidworks, Prusa Slicer



- Used **SolidWorks** for design and assembly of the robot structure
- Developed **3D Spline Interpolation** based path planning algorithm in python
- Trained **YOLO-v8** on custom tomato dataset for object detection and classification
- Developed Python script for forward and inverse **kinematics** of the robot
- Used **ROS2** for communciation between vision, planning and control subsystems

• NASA SpaceApps Challenge 2023 : Imaging Spectroscopy

October 2023

Tools: Python, NASA EMIT Database, MODIS Database



- Utilized EMIT & MODIS data to map biodiversity within the Cape Floristic Region of South Africa.
- Developed a Python script to extract and process data from the EMIT database
- Devised an algorithm to study biodiversity of a region using spectral data of nearby locations

• Smart Dustbin with Vision Based Waste Seggregation

March 2023

Tools: Python, Fusion 360, Arduino



- Trained and implemented YOLO v7 model for waste seggregation into paper, metal, plastic and organic waste
- Designed mechanical system for waste disposal at designated compartment

CERTIFICATIONS/ONLINE COURSES

• Arizona State University on Coursera: [Additive Manufacturing Specialization](#)

July 2024

• Northwestern University on Coursera: [Modern Robotics Specialization](#)

August 2024

• University of Colorado Boulder on Coursera: [Robotic Mapping and Trajectory Generation](#)

August 2024

• IACMI The Composites Institute: [CNC Machining Training Program](#)

July 2024

• DeepLearning.AI: [Deep Learning Specialization](#)

August 2024

WORK EXPERIENCE

Orion Space [Globe]

R&D Intern

March 2024 - July 2024

Bhaktapur, Nepal

- * Developed solar panel deployment system for **PocketQube satellite**
- * Conducted research on impact analysis of solar panel deployment
- * Design and simulation of hinges
- * Trained juniors on PocketQube satellite assembly and drop-testing

RESEARCH/PUBLICATIONS

S = IN SUBMISSION, J=JOURNAL, T=THESIS

[S.1]

Adhikari B, et al. (2024). **Design and Implementation of a Vision Integrated Delta Robot for Pick and Place Operations**. Manuscript submitted for publication in *Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science*.

[T.1]

Bishal Adhikari (2024). **Numerical Simulation And Experimental Validation Of Solar Panel Deployment Dynamics In A PocketQube Satellite**. Bachelor’s thesis, Tribhuvan University, TC IOE, Kathmandu, Nepal.

HONORS AND AWARDS

5th Annual Nepal AI School

Nepal Applied Mathematics and Informatics Institute (NAAMII)

Jan 2025

[Globe]

- * Awarded scholarship to attend 11 days long AI School
- * Attended lectures and completed labworks on Geometric Deep Learning, Computer Vision and Foundational Models
- * Participated in AI Hackathon and worked on Graph Neural Network for social media engagement forecasting

THAPATHALI GRADUATE CONFERENCE - 2081

Thapathali Campus, Institute of Engineering

June 2024

[Globe]

- * Awarded as one of the best final year projects
- * Presented the Delta robot project in the event

3D PRINTING TRAINING

Ministry of Industry Commerce and Supplies, Nepal

February 2023

[Globe]

- * Selected for 3D printing training program from Industrial Engineering Department
- * Learnt from industry experts about 3D printing technology

AI FELLOWSHIP AWARD

Fusemachines

January 2023

[Globe]

- * Granted fellowship to study and work on AI and Machine Learning projects using PyTorch
- * Got an opportunity to learn from industry experts
- * Obtained Microdegree in Machine Learning and Deep Learning

ADDITIONAL INFORMATION

Languages: Nepali (Native), English (Fluent), Hindi (Fluent)