BISHAL ADHIKARI

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Panauti, Nepal

EDUCATION

• **MISSISSIPPI STATE UNIVERSITY** *2025 - Present*
Department of Agricultural and Biological Engineering & Bagley College of Engineering Starkville, MS, USA
  ◦ PhD in **Engineering Technology**
  ◦ Research in **Precision Agriculture and Robotics**

• **TRIBHUVAN UNIVERSITY** *2020 - 2024*
Thapathali Campus, IOE 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 communication 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

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 [🌐]
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

ABE, MSU [🌐]
Graduate Research Assistant

July 2025 - Present

MS, USA

* Research on **Precision Agriculture** and **Robotics**

RESEARCH/PUBLICATIONS

[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

[🌐]

* 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

[🌐]

* 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

[🌐]

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

AI FELLOWSHIP AWARD
Fusemachines

January 2023

[🌐]

* 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)