

Nischal Maharjan

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EDUCATION

Tribhuvan University, IOE Pulchowk Campus

2016 - 2021

Bachelor Degree in Electronics and Communication Engineering

Pulchowk, Lalitpur, Nepal

- Full Scholarship

- Aggregate: 79.43%

- Rank: 9th Position (Top 1% in University)

SKILLS

Programming Languages

Python, C, C++, MATLAB, Assembly, MySQL

Computer Vision and Image Processing

OpenCV, scikit-image, Pillow, Yolo, Detectron2

Deep Learning

Pytorch, Tensorflow, Tensorboard, Keras, CometML

Machine Learning

scikit-learn, SciPy

Natural Language Processing

NLTK, spaCy

Data Analysis and Filter

Numpy, Pandas, Matplotlib, Seaborn

Frontend

HTML, CSS, Bootstrap

Backend

Flask, Rest Framework

Hardware design and Fabrication

Embedded System Design and Programming

Miscellaneous

Git Version Control, AWS, Linux

Soft Skills

Teamwork, Problem Solving, Time Management,
Leadership, Project Management, Good Communication

EXPERIENCE

Machine Learning Engineer

April 2021 - Present

Fusemachines Nepal Pvt. Ltd.

Kathmandu, Nepal

- Joined as an Associate Engineer and gained knowledge and experience by working in projects under experienced Supervisors.
- Promoted to an Machine Learning Engineer
- Worked as a Project Lead in client project regarding Counterfeit product detection.
- **Counterfeit product Detection**
Developed a computer vision pipeline for counterfeit product identification from images. Using multiple areas of interest of given product the custom designed model was trained to classify the product as real or fake. Improved sensitivity and Specificity from 91
- **AutoPricing of Products**
Developed a pipeline for price prediction of a product given its features such as condition, published date, and other parameters. LightGBM model was used for the task. Various techniques of Outlier rejection and feature engineering was implemented.
- **Area of Interest(AOI) Region detection of Product**
Implemented object detection model(yolov5) to train and detect multiple area of interest region of a product. Multiple Yolov5 models trained in different settings were combined to generate detection with high precision.

- **Human Trafficking Recognition from Escort Ads and Inter Ad Matching**

Trafficking Classification on basis of ad image along with various tags such as nudity, age, gender etc.

- **FuseStudio Project**

Developed a pipeline to convert of Slides and Scripts into the Videos. The slides designed in Google slides were converted into video and the scripts written for slides were used to generate audio. Text to speech model were used along with image processing techniques.

- **FuseAcademics Course Creation**

Collaborated in syllabus design and content creation for Automation2Go , Basics of Automation Programming and AI2GO Workshop

As a substitute instructor took few online class through fuseclassroom platform on Computer Science For AI for students of QI Roberts High School.

Robotics Engineer

Robotics Club, IOE Pulchowk Campus

2018 - 2020

Pulchowk, Lalitpur, Nepal

- **Robots for ABU Robocon 2019**

Construction of autonomous robots and their control according to the theme of the ABU Robocon competition. The robots took part in the annual international competition held in Ulaanbaatar, Mongolia.

- Mentored and oversaw junior batch for ABU Robocon 2020.

ACADEMICS AND PERSONAL PROJECTS

Real Time Visual Localisation and Mapping of Mobile Robot in Dynamic Environment (College Major Project)— Localisation of the mobile robot in case of changing environment by help of camera using concept of multiview geometry and computer vision. 2019-2021

Precision Livestock Farming— Smart poultry system with automatic maintenance of suitable environment and behavior analysis of chicken using image and sound analysis 2019

Vehicle Traffic Analysis and Management(College Minor Project)— Estimation of Traffic Congestion and controlling of traffic lights for proper management of traffic. 2019

Sign Language to Speech Conversion Using Gloves— Translates sign into speech by detecting gesture of hand by the gloves. 2018

Intelligent Character Recognition for Mathematical Documents (Freelancing)— OCR for mathematical documents containing equations April 2022 - June 2022

Changing Background in Live stream Video (Freelancing)— Background segmentation and replacement with overlay images or other effects Oct 2022 - Nov 2022

PARTICIPATION

- 18th ABU Robocon Competition held in Ulaanbaatar, Mongolia -2019
- First Winter School in AI- Organized by NAAMII-2018
- Deep Learning in Medical Imaging (DLMI) Workshop-Organized by NAAMII-2021
- 3 Days in AI Bursarship Workshop-2019
- AT Hackathon-2018
- LOCUS Exhibition and Competitions -2017, 2018, 2019

PUBLICATIONS

- Buddhacharya, S. M., Adhikari, R., Maharjan, N. Panday, S. P. (2022). Monocular Depth Estimation using a Multi-grid Attention-based Model. Journal of Innovative Image Processing, 4(3), 127-146. doi:10.36548/jiip.2022.3.001

HONOURS AND AWARDS

- **Hardware Thematic Project Winner**

Received for Project Precision Livestock Farming in LOCUS 2019, 16th National Technological Festivals 2019

- **Rohm Award**

presented to Team Nepal in the ABU Robocon 2019 Competition, held in Ulaanbaatar, Mongolia. 2019

- **Institute of Engineering Scholarship for B.E.**

Received Full scholarship for studying Bachelor degree in one of the most reputed engineering college of Nepal for securing 160th Rank in entrance examination 2017

VOLUNTEERING AND TEACHING EXPERIENCE

- Instructor for Hardware Fellowship — Organized by LOCUS 2017 and 2019
- Children in Technology (CIT) — Organized by LOCUS 2018
- Organizer of Robowarz — Organized by LOCUS 2019

ONLINE CERTIFICATIONS

[Introduction to Deep Learning – Coursera](#)

[Deep Learning in Computer Vision - Coursera](#)

[AI for Medical Diagnosis - Coursera](#)

[AI for Medical Prognosis - Coursera](#)

[Robotics:Perception - Coursera](#)

[Robotics:Estimation and Learning - Coursera](#)

[Advanced Recommender System - Coursera](#)

[AWS Cloud Technical Essentials – Coursera](#)

[AWS Cloud Practitioner Essentials - Coursera](#)

[Computer Vision Basics - Coursera](#)

[Introduction to Computer Vision and Image Processing - Coursera](#)

[Advanced Recommender System - Coursera](#)

[The Raspberry Pi Platform and Python Programming for the Raspberry Pi - Coursera](#)