PERSONAL INFORMATION

Nischal Maharjan

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- http://www.github.com/nis-ane
- http://www.linkedin.com/in/nischl-mhrjn

Gender Male | Date of birth 7 January 1999 | Nationality Nepalese

EDUCATION AND TRAINING

1 October 2023– Present | ### M.Sc. Data Science and Artificial Intelligence

Universität des Saarlandes, Saarbrücken Germany

https://www.uni-saarland.de/en/home.html

- **Current Grade: 1.1**

Courses | 3D Computer Vision, High Level Computer Vision, Computer Graphics, Image Processing and Computer Vision, Neural Network, Elements of Machine Learning, Machine Learning, Robustness in ML, Explainable AI

1 July 2025– 28 August 2025 | ### ETH Student Summer Research Fellowship Programme 2025

Computer Vision and Learning Group, ETH Zurich, Zurich Switzerland

https://inf.ethz.ch/studies/summer-research-fellowship.html

- **Assigned Supervisor: Prof. Siyu Tang**
- **Project Title: 3D Reconstruction in Challenging Sparse View Setup**

16 November 2016– 23 March 2021 | ### Bachelor Degree in Electronics and Communication Engineering

Institute of Engineering Pulchowk Campus, Tribhuvan University, Lalitpur Nepal

https://pcampus.edu.np/

- Full Scholarship
- Grade: 79.43%
- Rank: 9th Position (Top 1% in University)

Relevant Courses | C Programming, Object Oriented Programming, Artificial Intelligence, Data Mining, Computer Graphics, Computer Architecture, Discrete Structure, Database, Calculus, Probability and Statistics, Numerical Methods, Linear Algebra, Computer Network, Digital Signal Processing

Thesis | **Real Time Visual Localisation and Mapping of Mobile Robot in Dynamic Environment**– Localisation of the mobile robot in case of changing environment by help of camera using concept of multiview geometry and computer vision.

WORK EXPERIENCE

1 November 2023 – Present | ### Junior Researcher(Werkstudent)

Employer | August-Wilhelm Scheer Institut für digitale Produkte und Prozesse gGmbH Saarbrücken, Germany

https://www.aws-institut.de

– Implementation and Enhancement of RAG(Retrieval Augmented Generation) Pipeline
– Implementation of Document Classifier
– Tailored Text to Speech model for targeted use cases
– OCR-based Document Extraction

12 April 2021 – 20 September 2023

Machine Learning Engineer

Employer   Fusemachines Nepal Pvt. Ltd.
Kathmandu, Nepal

https://fusemachines.com/

– Developed vision based solution for operation of robot in the greenhouse for pollination and tomato cultivation. **(Project Lead)**
– **Developed Custom Computer Vision Model to classify product as real or fake on imbalanced dataset. Improved sensitivity and Specificity from 91% to 95% in the test set provided by the client.(Project Lead)**
– **Implemented object detection model(yolov5) to detect multiple area of interest region of a product.**
– **Developed a pipeline to convert of Slides and Scripts into the Videos using TTS and image processing.**
– Collaborated in syllabus design and content creation for Fuse Academics. Tutor for online class on Computer Science For AI.

1 Feburary 2020 – 31 January 2021

Program Coordinator

IEEE Pulchowk Student Branch IOE Pulchowk Campus,
Lalitpur, Nepal

https://edu.ieee.org/np-ioep/

– Organised programs such as Tech Talk and Blood Donation Programme

August 2018 – Feburary 2020

Robotics Engineer

Robotics Club, IOE Pulchowk Campus
Lalitpur, Nepal

https://robotics.pcampus.edu.np/

– **Construction of autonomous robots** and their control using techniques such as Kalman Filter for sensor fusion, PID Control, Inverse Kinematics, path planning according to the theme of the ABU Robocon competition 2019 held in Mongolia.

TEACHING EXPERIENCE

Winter Semester 2024/25   **Tutor: Elements of Machine Learning**, Universität des Saarlandes, Instructor: Prof. Dr. Isabel Valera

2021   **Tutor for Online Course of Fuse Academics**, Fusemacines Nepal

2020   **Instructor for Hardware Fellowship**, organised by LOCUS Nepal

2018   **Instructor for Children in Technology**, organised by LOCUS Nepal

PERSONAL SKILLS

Mother tongue   Nepali

Other languages

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
C2	C1	C1	C1	C1
A2	A2	A1	A1	A2

English — C2 | C1 | C1 | C1 | C1
German — A2 | A2 | A1 | A1 | A2

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user
Common European Framework of Reference for Languages

Technical skills
- **Programming Languages** - Python, C, C++, MATLAB, ROS
- **Web** - HTML, CSS, Flask, FastAPI
- **Machine Learning and Deep Learning** - Scikit-learn, Pytorch, Tensorflow, Keras, SciPy, Huggingface
- **Computer Vision** - OpenCV, Open3D, Pillow, Yolo, OCR, Detectron2, scikit-image, SimpleITK, Monai Framework
- **Natural Language Processing** - nltk, spaCy, Langchain
- **Data Analysis and Visualization** - Numpy, Pandas, Matplotlib, Seaborn, Plotly, Altair
- **Embedded System Programming and Hardware Fabrication**
- **Misc** - git, AWS, Tmux, Linux, Tensorboard, CometML, Jira

Hobbies

Skilled in sketching pencil portraits and craft works. Enjoy playing the flute and participating in sports, particularly basketball, badminton, and swimming. Familiar with basic steps of Salsa and Bachata. Passionate about traveling and exploring diverse cultures.

ADDITIONAL INFORMATION

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

Deutschland Stipendium der Universität des Saarlandes
Awarded with Deutschland Stipendium for the year 2024/2025   2024

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

Selected Projects

Lost City of Dwarka Image Rendering | Computer Graphics, MSc.- Rendering of underwater scene using ray tracing framework with features like Photon mapping, volumetric rendering, sdf, normal shading, thinlens, color grading and denoising.   Feb 2025

Generation of Real World Images from Simulated Images | High Level Computer Vision, MSc.- Experimentated image translation task with different architecture like Unet, ViT, Swin Transformer for GAN models to convert virtual image to real world image   Aug 2024

Structure from Motion framework | 3D Computer Vision , MSc. - Implementation of SFM framework to generate 3d structure from given set of images   Jan 2024

Robustness in Autonomous Driving Steering | Robustness in ML, MSc.- Experimented with methods for robustness against Adversarial attacks for Car steering estimation. Jan 2024

Monocular Depth Estimation—Worked on implementing and evaluating research idea of estimating depth from a single image.   2022

Intelligent Character Recognition for Mathematical Documents   2022

Precision Livestock Farming | Instrumentation II, B.E. –Developed AI based Smart poultry system with automatic maintenance of suitable environment and behavior analysis of chicken using image and sound analysis.   Feb 2019

Vehicle Traffic Analysis and Management | B.E. Minor Project–Estimation of Traffic Congestion and controlling of traffic lights for proper management of traffic.   2019

Participation		
	18th ABU Robocon Competition held in Ulaanbaatar, Mongolia	-2019
	NAAMII AI Winter School	- 2018
	Deep Learning in Medical Imaging(DLMI) Workshop	- 2021
	ROS-Workshop	-2020
	3 Days in AI Bursarship Workshop	-2019
	AT Hackathon	-2018
	LOCUS Exhibition and Competitions	-2017, 2018, 2019

Certification		
	AWS Certification - Machine Learning Speciality from AWS Training	2022

Online Course Certification

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