

## EDUCATION

**Advanced College of Engineering and Management**

Kathmandu, Nepal

Institute of Engineering (IOE), Tribhuvan University

*B.E. in Computer Engineering 77.22/100 (Rank: 3 / 96) (First Div.)*

2018 - 2023

- **Advisor:** Prof. Dr. Subarna Shakya
- **Research area:** Recommender System and Machine Learning

## PUBLICATIONS

1. Recchia G, Mangat C, Nyachhyon J, Sharma M, Canavan C, Epstein-Gross D, Abdulbari M. Confirmation bias: A challenge for scalable oversight. AAAI-AIA, 2026. [DOI]
2. Nyachhyon J, Sharma M, Thapa P, Bal BK. Consolidating and Developing Benchmarking Datasets for the Nepali Natural Language Understanding Tasks. AACL-IJCNLP, 2025. [DOI]
3. Thapa P, Nyachhyon J, Sharma M, Bal BK. Development of Pre-Trained Transformer-based Models for the Nepali Language. (CHIPSAL) COLING, 2025. (*Joint First Author*) [DOI]
4. Thapa P, Sharma M, Nyachhyon J, Pandeya YR. Local Herb Identification Using Transfer Learning: A CNN-Powered Mobile Application for Nepalese Flora. Arxiv Preprint, 2025. [DOI]
5. Banjara B, Shrestha J, Nyachhyon J, Timilsina R, Shakya S. Interactive Guide Assignment System with Destination Recommendation and Built-in Chatbox. Journal of Trends in Computer Science and Smart Technology, 2023. [DOI]

## RESEARCH EXPERIENCE

**Manifold Research Group**

USA (Remote)

*Open Science Research Fellow*

2025.10 - Present

- **Software Control Agents:** Evaluate Mind2Web datasets and benchmarked models such as UITars and Qwen2.5-V.
- **Analysis:** Analyzed model behavior on spatial reasoning and action grounding in complex environments.

**Information and Language Processing Research Lab (ILPRL)**

Kavre, Nepal

*Research Assistant, Supervisor: Dr. Bal Krishna Bal*

2024.07 - Present

- **Nepali Corpus for Foundation Models:** Assembled and processed 27.5GB Nepali text corpus, contributing to low-resource language data and addressing data scarcity.
- **Pre-Training:** Pretrained BERT, RoBERTa, and GPT-2 with instruction tuning, achieving SOTA with 95.60 on Nep-gLUE benchmark.
- **Benchmarking:** Led design and release of NLUE benchmark with 12 Nepali NLU tasks, setting a new standard for evaluation.

**Institute for Research and Innovation in Intelligent Systems (IRIIS)**

Nepal

*Co-founder & Researcher*

2024.12 - Present

- **Multilingual Reasoning Models:** Developing planning & reasoning datasets to understand model capabilities in multi-agent environments.
- **Education:** Create visual educational materials on probability theory and CUDA programming, inspired by 3Blue1Brown.

**Modulo Research Ltd.**

Cambridge, UK (Remote)

*Research Intern, Supervisor: Dr. Gabriel Recchia*

2024.06 - 2024.08

- **Automated Analysis:** Automate analysis of 20-minute screen recordings, refining scene change detection with 80% precision via URL change tracking and LLM-based event and detail extraction of video frames.
- **LLM Alignment Evaluation:** Conducted scalable oversight experiments by comparing LLM outputs with human annotations to assess and improve intent alignment.

## PROFESSIONAL EXPERIENCE

<b>Insyde AI</b> <i>AI Developer</i>	Maryland, USA (Remote)
	2025.01 - Present
<ul style="list-style-type: none"> <li><b>AI Agent:</b> Developed and deployed AI agents to automate financial calculations, multi-scenario evaluation, and user-facing email generation for loan officers.</li> <li><b>Automation:</b> Reduced per-customer processing time by over 90%, enabling officers to handle 10x more requests with improved consistency and response quality.</li> </ul>	
<b>Virtly IT &amp; Business Solutions Sarl (ICEBRKR)</b> <i>ML Engineer</i>	Geneva, Switzerland (Remote)
	2024.03 - 2024.09
<ul style="list-style-type: none"> <li><b>Finetuning:</b> Finetuned BART, T5, Pegasus for summarization (ROUGE-L &gt;50, implying very high overlap with human summaries); Phi-3 for task prioritization system.</li> <li><b>Scheduling Algorithm:</b> Built an algorithm to resolve online meeting scheduling conflicts by proposing optimal time slots.</li> </ul>	
<b>LogicTronix</b> <i>ML/CV Engineer</i>	Lalitpur, Nepal
	2023.06 - 2024.03
<ul style="list-style-type: none"> <li><b>3D Object Detection:</b> Integrated and optimized SFA3D into ADAS stack, achieving real-time 3D object detection at 20 FPS on embedded platforms.</li> <li><b>Object Detection &amp; Tracking:</b> Implemented YOLO, CenterNet, and Deep SORT algorithms for real-time object detection and tracking at over 50 FPS.</li> <li><b>Model Quantization:</b> Reduced model size by over 60% through quantization for Xilinx FPGA deployment, improving edge inference efficiency.</li> </ul>	

## TALKS & PRESENTATIONS

- Development of Pre-Trained Transformer-based Models for the Nepali Language, COLING 2025*, Oral Presentation.
- Consolidating and Developing Benchmarking Datasets for the Nepali Natural Language Understanding Tasks, ACL-IJCNLP 2025*, Conference Presentation.

## VOLUNTEER

<b>PyTorch Tester &amp; Mentor</b> <i>DeepLearning.AI</i>	Remote
	2025.08 - Present
<ul style="list-style-type: none"> <li><b>Bug Hunting:</b> Test courses that includes lectures, quizzes, labs and assignments for general and code specific bugs, and report them.</li> <li><b>Mentorship:</b> Guide learners on PyTorch and deep learning, resolving quiz conflicts, clarifying doubts, and supporting forum discussions in DeepLearning.AI courses.</li> </ul>	
<b>Instructor &amp; Event Organizer</b> <i>Advanced College of Engineering and Management</i>	Kathmandu, Nepal
	2022.03 - 2023.01
<ul style="list-style-type: none"> <li><b>Workshop:</b> Led hands-on workshops mentoring 100+ peers and juniors in programming and ML fundamentals.</li> <li><b>Curriculum Development:</b> Developed a structured curriculum covering Python (basic to advanced) and introductory Machine Learning.</li> <li><b>Techfest:</b> Organized international zonal qualification from Nepal for IITB Techfest.</li> </ul>	

## REFERENCES

<b>Prof. Dr. Bal Krishna Bal</b> Associate Dean, Kathmandu University Professor, Department of Computer Science and Engineering, School of Engineering <i>bal@ku.edu.np</i>
<b>Dr. Gabriel Recchia</b> Director, Modulo Research Ltd <i>gabe@moduloresearch.com</i>
<b>Prof. Dr. Subarna Shakya</b> Director, Information Technology Innovation Center, Tribhuvan University Professor, Department of Electronics and Computer Engineering, Institute of Engineering <i>drss@ioe.edu.np</i>