

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
<ul style="list-style-type: none"> • Advisor: Prof. Dr. Subarna Shakya • Research area: Recommender System and Machine Learning 	

RELEVANT 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]

RESEARCH EXPERIENCE

Manifold Research Group	USA (Remote)
<i>Open Science Research Fellow</i>	2025.10 - Present
<ul style="list-style-type: none"> • Software Control Agents: Built and benchmarked LLM-driven software control agents on Mind2Web, conducting systematic comparisons of models (e.g., UITars, Qwen2.5-V) in complex, real-world web environments. • Trajectory Generation: Developed trajectory generation and perturbation pipelines for training and stress-testing agents, enabling robustness evaluation under distribution shifts and unseen task variants. • Analysis of Agent Behavior: Conducted systematic analysis of agent behavior, focusing on spatial reasoning, tool use, and action grounding failures. 	

Information and Language Processing Research Lab (ILPRL)	Kavre, Nepal
<i>Research Assistant, Supervisor: Dr. Bal Krishna Bal</i>	2024.07 - Present
<ul style="list-style-type: none"> • Benchmarking: Led the design and release of the NLUE benchmark (12 Nepali NLU tasks), establishing a standardized evaluation suite for low-resource LLMs. • Nepali Corpus for Foundation Models: Assembled and processed 27.5GB Nepali text corpus addressing data scarcity. • Pre-Training and Analysis: Pretrained BERT/RoBERTa/GPT-2 with instruction tuning, achieving SOTA on Nep-gLUE; conducted comparative evaluation and error analysis. 	

Institute for Research and Innovation in Intelligent Systems (IRIIS)	Nepal
<i>Co-founder & Researcher</i>	2024.12 - Present
<ul style="list-style-type: none"> • 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)
<i>Research Intern, Supervisor: Dr. Gabriel Recchia</i>	2024.06 - 2024.08
<ul style="list-style-type: none"> • 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

Insyde AI	Maryland, USA (Remote)
<i>AI Developer</i>	2025.01 - Present
<ul style="list-style-type: none"> LLM-based Agent: Developed LLM-based agent systems for financial workflows, including multi-scenario reasoning, tool use, and automated decision pipelines. LLM-aided Agent Pipelines: Built agents for end-to-end task execution - data extraction, calculation, validation, and user-facing report/email generation. Automation: Reduced per-customer processing time by >90%, enabling 10x throughput via agent-driven automation. 	
Virtly IT & Business Solutions Sarl (ICEBRKR)	Geneva, Switzerland (Remote)

<i>ML Engineer</i>	2024.03 - 2024.09
<ul style="list-style-type: none"> Finetuning: Finetuned BART, T5, Pegasus for summarization (ROUGE-L >50, implying very high overlap with human summaries); Phi-3 for task prioritization system. Scheduling Algorithm: Built an algorithm to resolve online meeting scheduling conflicts by proposing optimal time slots. 	

LogicTronix	Lalitpur, Nepal
<i>ML/CV Engineer</i>	2023.06 - 2024.03
<ul style="list-style-type: none"> 3D Object Detection & Tracking: Integrated and optimized SFA3D into ADAS stack, achieving real-time 3D object detection and tracking on embedded platforms. Model Quantization: Reduced model size by over 60% through quantization for Xilinx FPGA deployment, improving edge inference efficiency. 	

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

PyTorch Tester & Mentor	Remote
<i>DeepLearning.AI</i>	2025.08 - Present
<ul style="list-style-type: none"> Bug Hunting: Test courses that includes lectures, quizzes, labs and assignments for general and code specific bugs, and report them. Mentorship: Guide learners on PyTorch and deep learning, resolving quiz conflicts, clarifying doubts, and supporting forum discussions in DeepLearning.AI courses. 	

Instructor & Event Organizer	Kathmandu, Nepal
<i>Advanced College of Engineering and Management</i>	2022.03 - 2023.01
<ul style="list-style-type: none"> Workshop: Led hands-on workshops mentoring 100+ peers and juniors in programming and ML fundamentals. Curriculum Development: Developed a structured curriculum covering Python (basic to advanced) and introductory Machine Learning. Techfest: Organized international zonal qualification from Nepal for IITB Techfest. 	

REFERENCES

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