

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**

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| Insyde AI <i>AI Developer</i> | Maryland, USA (Remote) |
| | 2025.01 - Present |
| <ul style="list-style-type: none"> AI Agent: Developed and deployed AI agents to automate financial calculations, multi-scenario evaluation, and user-facing email generation for loan officers. Automation: Reduced per-customer processing time by over 90%, enabling officers to handle 10x more requests with improved consistency and response quality. | |
| Virtly IT & Business Solutions Sarl (ICEBRKR) <i>ML Engineer</i> | Geneva, Switzerland (Remote) |
| | 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 <i>ML/CV Engineer</i> | Lalitpur, Nepal |
| | 2023.06 - 2024.03 |
| <ul style="list-style-type: none"> 3D Object Detection: Integrated and optimized SFA3D into ADAS stack, achieving real-time 3D object detection at 20 FPS on embedded platforms. Object Detection & Tracking: Implemented YOLO, CenterNet, and Deep SORT algorithms for real-time object detection and tracking at over 50 FPS. Model Quantization: Reduced model size by over 60% through quantization for Xilinx FPGA deployment, improving edge inference efficiency. | |

**TALKS & PRE-
SENTATIONS**

- 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

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| PyTorch Tester & Mentor <i>DeepLearning.AI</i> | Remote |
| | 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 <i>Advanced College of Engineering and Management</i> | Kathmandu, Nepal |
| | 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

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| 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> |