Jinu Nyachhyon

https://jinunyachhyon.github.io/

(+977) 9843820800
jinu.075bct021@acem.edu.np

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

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)
Open Science Research Fellow — 2025.10 - Present

- **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
Research Assistant, Supervisor: Dr. Bal Krishna Bal — 2024.07 - Present

- **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
Co-founder & Researcher — 2024.12 - Present

- **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

Insyde AI Maryland, USA (Remote)
AI Developer 2025.01 - Present

- **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 10× throughput via agent-driven automation.

Virtly IT & Business Solutions Sarl (ICEBRKR) Geneva, Switzerland (Remote)
ML Engineer 2024.03 - 2024.09

- **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
ML/CV Engineer 2023.06 - 2024.03

- **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

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

Volunteer

PyTorch Tester & Mentor Remote
DeepLearning.AI 2025.08 - Present

- **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
Advanced College of Engineering and Management 2022.03 - 2023.01

- **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:** Oragnized 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
bal@ku.edu.np

Dr. Gabriel Recchia
Director, Modulo Research Ltd
gabe@moduloresearch.com

Prof. Dr. Subarna Shakya
Director, Information Technology Innovation Center, Tribhuvan University
Professor, Department of Electronics and Computer Engineering, Institute of Engineering
drss@ioe.edu.np