# Jinu Nyachhyon

(+977) 9843820800
nyachhyonjinu@gmail.com

## Education

**Institute of Engineering, Tribhuvan University** — Kathmandu, Nepal
*B.E. in Computer Engineering 77.22/100* — 2018 - 2023

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

## Publications

1. Prajwal Thapa, **Jinu Nyachhyon**, Mridul Sharma, Bal Krishna Bal. Development of Pre-Trained Transformer-based Models for the Nepali Language. *International Committee on Computational Linguistics*, 2025.
2. **Jinu Nyachhyon**, Mridul Sharma, Prajwal Thapa, Bal Krishna Bal. Consolidating and Developing Benchmarking Datasets for the Nepali Natural Language Understanding Tasks. *arXiv preprint arXiv:2411.19244*, 2025. (In prep. AACL)
3. Gabriel Recchia, Chatrik Mangat, **Jinu Nyachhyon**, Mridul Sharma, Callum Canavan, Dylan Epstein-Gross, Mohammad Abdulbari. Confirmation bias: A challenge for scalable oversight. *arXiv preprint arXiv:2507.19486*, 2025. (In prep. AAAI)
4. Prajwal Thapa, Mridul Sharma, **Jinu Nyachhyon**, Yagya Raj Pandeya. Local Herb Identification Using Transfer Learning: A CNN-Powered Mobile Application for Nepalese Flora. *arXiv preprint arXiv:2505.02147*, 2025. (In prep.)
5. Babina Banjara, Jinish Shrestha, **Jinu Nyachhyon**, Rijan Timilsina, Subarna Shakya. Interactive guide assignment system with destination recommendation and built-in chatbox. *Journal of Trends in Computer Science and Smart Technology*, 2023.

## Research

**Development of Pre-Trained Transformer-based Models for the Nepali Language**
*Information and Language Processing Research Lab (ILPRL)*

- **Advisor:** Prof. Dr. Bal Krishna Bal
- **Research Area:** Natural Language Processing

**Consolidating and Developing Benchmarking Datasets for the Nepali Natural Language Understanding Tasks**
*Information and Language Processing Research Lab (ILPRL)*

- **Advisor:** Prof. Dr. Bal Krishna Bal
- **Research Area:** Benchmarking and Natural Language Processing

**Confirmation bias: A challenge for scalable oversight**
*Modulo Research Ltd.*

- **Advisor:** Dr. Gabriel Recchia
- **Research Area:** AI Alignment

**Local Herb Identification Using Transfer Learning: A CNN-Powered Mobile Application for Nepalese Flora**
*Kathmandu University*

- **Advisor:** Prof. Dr. Yagya Raj Pandeya
- **Research Area:** Computer Vision

## Experiences

**Insyde AI** — Maryland, USA
*AI Developer* — 2025.01 - Present

- **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 10× more requests with improved consistency and response quality.

**Information and Language Processing Research Lab (ILPRL)** — Kavre, Nepal
*Research Assistant* — 2024.07 - 2025.02

- **Data Collection**: Collected a 27.5GB Nepali corpus, 2.4× larger than previous resources, addressing data scarcity and enabling high-quality pretraining for low-resource language modeling.
- **Pre-Training**: Pre-trained BERT, RoBERTa, and GPT-2 and applied instruction tuning, achieving +2 points over the best existing model on Nep-gLUE and improved performance on Nepali text generation tasks.
- **Benchmarking**: Designed and released NLUE with 12 tasks for Nepali NLU, setting a new benchmark for low-resource language evaluation.

**Modulo Research Ltd.** — Cambridge, UK
*Research Intern* — 2024.06 - 2024.08

- **Automated Analysis**: Built a pipeline to 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.

**Virtly IT & Business Solutions Sarl (ICEBRKR)** — Geneva, Switzerland
*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**: 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.

## Academic Service

**Instructor** — 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.