

# JYOTI POKHREL

Pokhara, Nepal | jyotipokhrelwork@gmail.com | linkedin.com/in/jyotipokhrel22

## EDUCATION

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**B.Sc. Computer Science and Information Technology** **GPA: 3.4/4.0**  
Soch College of IT, Pokhara 7<sup>th</sup> Semester · Batch Topper (2<sup>nd</sup> & 3<sup>rd</sup> Sem)

**Microdegree in AI - Fusemachines** 2025

**Nepal AI School - NAAMII** Dec 2025

## EXPERIENCE

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**AI Engineer - SkinPal AI** Mar 2026 – Present

- Built and deployed AI automation pipelines to streamline skincare recommendation workflows
- Developed acne detection model achieving **84.3% mAP accuracy** using computer vision techniques

**Researcher & Content Lead - SkinPal AI** Sep 2025 – Mar 2026

- Built RAG pipeline using LangChain, pgvector, and FastAPI for personalized skincare recommendations
- Wrote blogs about data-driven skincare.

**AI Fellow - FuseAI / Fusemachines** May – Dec 2025

- Delivered 10+ ML projects covering computer vision, generative modeling, and signal processing
- Built end-to-end pipelines with MLflow experiment tracking and deployment-ready outputs

## PUBLICATIONS & WRITING

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- **Dynamic Obstacle-Aware Largest Empty Circle (DO-LEC)** - International Journal on Engineering and Technology (INJET), 2025
- **📖 How RAG Works: A Beginner's Guide to Retrieval-Augmented Generation** - Medium, 2026

## PROJECTS

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**DO-LEC: Dynamic Obstacle-Aware Largest Empty Circle** *INJET 2025*

- Computational geometry algorithm for real-time obstacle avoidance; 40% faster than  $O(n^2)$  baseline

**🏠 Guided Attention Learning for ECG Classification**

- Attention-guided neural network; 95.99% accuracy, 0.9647 F1-score on multi-class ECG classification

**🗣️ Voice-to-Diabetes Detection**

- 87% accuracy using BYOL embeddings + Federated Learning (FedAvg) for privacy-preserving inference

**🌐 GNN for HIV Molecular Prediction**

- 89% ROC-AUC on 40k molecular graphs using PyTorch Geometric and RDKit; 100+ experiment runs

## TECHNICAL SKILLS

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**Core:** Python, SQL, Git

**AI / LLM:** LangChain, PyTorch, scikit-learn, RAG, pgvector

**Data & Backend:** PostgreSQL, FastAPI, DBMS design, MLflow, Streamlit

## ACHIEVEMENTS

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- Women in Data Conference 2025 (full scholarship)
- NAAMII AI Hackathon - selected for 2<sup>nd</sup> AI in Health Africa Conference
- Cohort 5 - Aspire Leaders Program, Harvard Business School (2025)
- IDEATHON FemTech - 1<sup>st</sup> Runner-Up