

# Nabin Adhikari

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## EDUCATION

### Virginia Tech

M.S. in Computer Engineering, Bradley Dept. of ECE Current GPA: 4.0/4.0

Blacksburg, VA

Jan 2025 – Present

- Relevant Coursework: Advanced Machine Learning, Apps of Machine Learning, Trustworthy Machine Learning, Algorithms for Big Data and Nonlinearity & Predictability

## TECHNICAL SKILLS

**Languages:** Python, C, C++, JavaScript, Java, SQL, NoSQL, Solidity, HTML/CSS

**Frameworks:** PyTorch, TensorFlow, Keras, Scikit-learn, Hugging Face Transformers, OpenCV, pandas, NumPy, Matplotlib, Seaborn, MLflow, Weights & Biases, FastAPI, SQLAlchemy, Flask

**Tools:** Git, Docker, Kubernetes, AWS, MLflow, Airflow, Streamlit, Postman, Jupyter

## EXPERIENCE

### AI for Technology Licensing & Discovery Intern

Mar 2025 – Present

Virginia Tech – Office of Research & Innovation

Blacksburg, VA

- Created 180+ AI-assisted patent marketing briefs supporting patent filing, licensing, and commercialization.
- Improved Tech Publisher platform using AI tools and patent intelligence systems to streamline workflows.

### Software Engineering Intern

May 2025 – Aug 2025

Virginia Tech – Vet Med Research & Graduate Studies

Blacksburg, VA

- Enhanced departmental web pages and implemented automated PDF formatting tools.
- Managed CMS validation, content updates, and internal web development tasks.

### Founding Software Engineer

Aug 2022 – May 2023

BuildSupply (MIT Funded)

Boston, MA

- Designed and built the core AI-powered e-commerce platform end-to-end, developing scalable backend services, databases, and APIs to support SMB-focused building supply procurement.
- Developed and integrated AI/ML components to optimize supplier discovery, pricing efficiency, and user experience.

### Co-founder & CEO

Sep 2022 – Present (Academic Leave)

Laxmi Soft Pvt. Ltd.

Kathmandu, Nepal

- Launched two enterprise systems: **Laxminn**(50+ hotels) and **SchoolsIE**, a school management platform adopted by a major school in Nepal.
- Led AI-based enterprise solution design, team building, and strategic growth initiatives.

## PROJECTS

### Autonomous Hardening of LLM Defenses via Adversarial Feedback

Github

Python, PyTorch, Hugging Face Transformers, PEFT (LoRA), Llama 3.1 (8B/70B), DeBERTa, WandB, NVIDIA H200

- Built a closed-loop adversarial system to detect and patch LLM vulnerabilities in real time.
- Reduced exposure to unseen prompt attacks by approximately 22%.

### Time-Aware U-Net Image Generator

Github

Python, TensorFlow, Keras, Oxford-IIIT Pet dataset

- Designed a custom time-aware U-Net with ResNet blocks and self-attention for image generation.
- Trained and evaluated on Oxford-IIIT Pet dataset.

### Multimodal Emotion Classification

Github

Python, PyTorch, BERT, ResNet

- Developed a multimodal emotion recognition system combining video, audio, and text using pre-trained BERT and ResNet models.

### Automated Face Recognition Based Attendance System Using Retina face and FaceNet

Github

Python, Scikit-learn, Tensorflow2.x, Keras, Facenet, RetinaFace, Flask, NoSQL

- A machine learning based approach for taking attendance in class and it's database management.

## INVOLVEMENTS

- Completed 10+ certifications in AI, ML, Deep Learning, and Applied Mathematics (MIT, Harvard, Coursera).
- Publications: Over Speed Surveillance System Using Deep Learning and Distributed System (The Journal of Engineering, under review) and Towards Energy Equity: Technological Interventions for Reliable Electricity in the Himalayas (Next Energy, under review)
- Course Instructor for "Data Science and Machine Learning in Python" at Deerwalk Institute of Technology
- Speaker on "AI and Blockchain" at Esatya.
- 2nd Runner-up, Line Tracking Robot Competition.