

Pratyush Kumar Lal

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in LinkedIn 🐙 GitHub

Education

Year	Degree/Certificate	Institute	CGPA/Percentage
2021-Present	B. Tech	National Institute of Technology, Arunachal Pradesh	7.85
2020	CBSE (XII)	Sunbeam School Lahartara, Varanasi	89%
2018	CBSE (X)	Sunbeam School Lahartara, Varanasi	95.2%

Experience

AI Engineer Intern

May 2024 – Aug 2024
Dimension Forge

- Engineered AI-driven products for **image generation**, **sales chatbots**, and **automated blog generation** using **vector databases**, **semantic searches** and **Langchain**.
- Designed and implemented a scalable **monolithic backend architecture** with **APIs**, utilizing **FastAPI**, **AWS (EC2, S3)**, and **Docker** for containerized deployment.
- Fine-tuned** transformer models using **LoRA** and advanced **prompt engineering** techniques.
- Resolved** SDXL's **77 token constraint** to output high-quality image generation.
- Conducted stakeholder consultation to refine workflows and enhance product alignment.

Gen-AI Developer Intern

Jan 2024 – Mar 2024
Synergy AI LLC

- Improved **PII** detection in **data processing systems** by optimizing **Microsoft library** configurations, enhancing **data security** and **regulatory compliance**.
- Developed **SDK** as a **PyPI package** for **RESTful API** integration; implemented **CI/CD pipelines** with **GitHub Workflows** and created **developer documentation**.
- Boosted server performance** by optimizing Gunicorn worker threads with **gevent** and **eventlet**, improving throughput by **30%**. and improved **codebase security** with **PyArmor obfuscation**.

Projects

NER model for Tax Data

[GitHub-NER](#) [🔗](#)

- Trained** an **NER model** for a **237,016-entry dataset** of **OCR-extracted text** focusing on entity extraction/classification and addressing missing values and class imbalance .
- Applied Keras' **TextVectorization** to convert categorical 'field' data into **numerical vectors** for model training.
- Built and evaluated an **ANN**, achieving an **F1 score** of **0.928**, and **improved performance** with **XGBoost (F1 score of 0.972)**.
- Created field-wise metrics to assess precision, recall, and F1 scores for each class. .

Trading Strategy & Closing Price Prediction

[GitHub-Trading strategy](#)
[closing price](#) [🔗](#)

- Extracted tick-level data of cryptocurrencies in bins of varying time intervals from **Bitmex exchange** via **API**.
- Predicted market sentiments for trading strategy and used **XGBoost** to get an **f1-score** of **0.67**.
- Predicted closing prices of securities using a four-layer neural network with two **LSTM layers** and optimised results.

- Applied pre-processing of text reviews using the **NLTK library** for stemming, normalisation, and stop word removal.
- Implemented **Word Embeddings** to map semantically similar words to geometrically closer embedding vectors.
- Applied different **Naive Bayes algorithms** to classify texts based on sentiments and achieved an accuracy of **88.2%**.

Technologies

Programming Languages: C/C++, Python

Web Development Languages: HTML, CSS, JavaScript (basic)

Software Packages: NumPy, Pandas, Matplotlib, TensorFlow

Office/Dev Tools: Git, GitHub, MS Excel, Docker, AWS, LaTeX

Relevant Coursework

Probability and Statistics

Machine learning specialization*

Intro to programming with C/C++

Linear algebra calculus

Data Structures and Algorithms*

Differential Equations

Achievements

2 * [codechef](#) (1470 rating)

2nd position Computex Cup (Addovedi, NIT AP)

Silver certificate [IIT Bombay c++ NPTEL course](#)

Cleared JEE Mains

Cleared NTSE stage 1 (2018)

4th position inter-NIT coding competition (NSCC)

Positions of Responsibility

Coordinator

NSCC NITAP

- Part of a team of 5 members fostering the enthusiasm of 100+ students in **Competitive coding and programming**.
- Helped conduct **talks, group discussions**, and **competitions** to encourage interest in new and emerging technologies.
- Conducted a **GitHub session** for freshmen to introduce them to version control.

Member

National Service Scheme (NSS)

- Participated in **community service** activities and government-led programs.
- Contributed to **campus enhancement** and supported local initiatives as a dedicated member of NSS.

Extra Curricular

Co-author

July 2017 – May 2018

In the Light of the Sun — Quill Club

- Co-authored a **short story collection** with fellow writers.
- Improved **writing skills** through collaboration and feedback.

Musician

Self-Taught Guitarist

- Self-taught **guitar** via online tutorials.
- Performed at the **college fest**.