Pratyush Kumar Lal

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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 & Data Science intern — May 2024 – Aug 2024
Dimension Forge

- **Engineered** AI-driven products for **image generation**, **sales chatbots**, and **automated blog generation** using **vector databases**, **RAG** and **Langchain**.
- **Designed** and **implemented** a scalable **monolithic backend architecture** with **APIs**, utilizing **FastAPI**, **AWS** (**EC2**, **S3**), and **Docker** for containerized deployment, while **fine-tuning LLMs** using **LoRA** .
- **Resolved** SDXL's **77-token limitation** by implementing **vector concatenation** with **PyTorch**, enabling high-quality image generation, and **collaborated** with **stakeholders** to optimize workflows.

AI-Dev Intern — Jan 2024 – March 2024
Synergy ML

- **Improved PII detection** in **data processing systems** by optimizing a Microsoft library configurations, enhancing **data security** and **regulatory compliance.**
- **Developed** an **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 | *Code*

- **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.
- Built and evaluated an **ANN**, achieving an **F1 score** of **0.928**, and **improved performance** with **XGBoost** (**F1 score of 0.972**) and evaluated F1 scores using fieldwise metrics for each class.

Trading Strategy and Closing Price Prediction | *Code*

- 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.

TECHNICAL SKILLS

Languages: Python, C/C++, SQL, JavaScript, HTML/CSS
Libraries & Frameworks: FastAPI, Numpy, Pandas, MongoDB, Matplotlib, Tensorflow, Pytorch
Developer Tools: Git, Github, Docker, AWS, VS Code, Jupyter Notebook
Operating Systems: Windows, Linux(Ubuntu)

ACHIEVEMENTS

- Achieved **top 2% ranking** out of 31,000 teams in a **national level case study competition** organised by NAMO
- Secured **2nd position** in **Computex Cup (Addovedi)** at **NIT Arunachal Pradesh**.
- Awarded a **Silver Certificate** for the **C++ NPTEL course** by **IIT Bombay**.
- Cleared **JEE Mains** and **NTSE Stage 1** (2018).
- Achieved **4th position** in the **Inter-NIT Coding Competition (NSCC)**.