



PRATYUSH BASU

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SUMMARY

AI/ML-focused Computer Science and Engineering student skilled in Python, Machine Learning, Deep Learning & NLP. Experienced in developing and deploying ML models, integrating Generative AI with APIs like Gemini and building AI-powered applications using Flask. Hackathon finalist with strong teamwork, problem-solving and adaptability skills.

EXPERIENCE

Capsitech IT Services Pvt. Ltd. — AI/ML Intern (July 2025 – Present)

- Working with Transformer architectures, TensorFlow, and Keras on NLP and ML projects.
- Performing data preprocessing, feature engineering, model evaluation and tuning to improve accuracy.
- Building ML pipelines using Python, NumPy, pandas and scikit-learn for experimentation and analysis.

PROJECTS

- **Virtual Try-On System using Diffusion Models (CatVTON)** — Built a diffusion-based virtual try-on system using CatVTON, enabling realistic garment transfer on human images. Integrated automatic clothing segmentation, optimized inference for low-VRAM GPUs and enabled real-time try-on via Streamlit. [\[GitHub\]](#)
- **IMDB Sentiment Analysis (Bi-LSTM — NLP)** — Implemented Bi-LSTM-based IMDB sentiment analysis, addressing RNN underfitting and achieving ~92% accuracy, with real-time inference via a Streamlit UI. [\[GitHub\]](#)
- **Training Pipelines with MLflow & Hydra** — Built an end-to-end ML pipeline using Hydra for configuration and MLflow for experiment tracking across multiple datasets. Enabled preprocessing, training and evaluation. [\[GitHub\]](#)

EDUCATION

- Future Institute of Engineering and Management, Kolkata — B.Tech in Computer Science and Engineering (2022–2026)
- GPA: 7.57 (till 6th semester) | SVMCM Scholarship (2022–Present)
- Core: ML, Data Structures and Algorithms, OOPs
- Harinavi D.V.A.S High School, West Bengal — Higher Secondary (Class XII, PCMCS, 2020–2022) – 85.00 %

TECHNICAL SKILLS

- Programming: Python, C++, C
- ML & NLP: TensorFlow, Keras, scikit-learn, spaCy, NLTK | Data & Visualization: pandas, NumPy, Matplotlib
- Generative AI: Gemini API, Hugging Face Transformers, Prompt Engineering, LangChain & RAG (Basic)
- Web Dev: Flask, HTML, CSS, Bootstrap, JavaScript, Streamlit
- Database: SQL (Basic) | Tools: Git, GitHub, VS Code, Google Colab, MLflow, DVC (Basic), Chrome Developer Tools

ACHIEVEMENTS & CERTIFICATES

- SparkHack Hackathon (2025) – Finalist (Top 10)
- FrostHack S01 (2025) – Finalist (Top 8)
- Decode DSA with C++ – PW Skills (Dec 2023)
- Data Science, AI & ML using Python – Ardent Computech Pvt. Ltd. (Dec 2024)
- Deep Learning, GenAI & Prompt Engineering – Ardent Computech Pvt. Ltd. (Mar–Apr 2025)

SOFT SKILLS & LANGUAGES

- Languages: English (Professional), Bengali (Proficient), Hindi (Intermediate)
- Soft Skills: Teamwork, Leadership, Collaboration, Adaptability, Creativity, Innovation, Quick Learning