

Kartik Lodhi

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<https://github.com/Kartik-001>

Professional Summary

Computer Science graduate specializing in AI and Machine Learning. Experienced in building deep learning models from the ground up, including Transformers and custom tokenizers. Seeking a Data Science or AI Engineer role to apply Python, PyTorch, and NLP skills to solve complex challenges.

Experience

Agratas Edutech Pvt Ltd

May 2023 - Jul 2023

Artificial Intelligence Intern

Bhopal, MP

- Improved prediction accuracy by 15% by developing and fine-tuning ML models.
- Increased data processing efficiency by 30% by building data pipelines with Pandas and NumPy.
- Deployed a Streamlit sentiment analysis tool to provide actionable user insights.
- Researched NLP findings that led to the team's adoption of more efficient training strategies.

Projects

Fraud Detection in Financial Transactions

- Developed an end-to-end fraud detection pipeline for a dataset of over 6.3 million transaction records using Python, Pandas, and Scikit-learn.
- Implemented tree-based models, including Random Forest and XGBoost, and engineered new features to achieve a ROC-AUC score of 0.999.
- Analyzed model results to identify and interpret real-world fraud patterns, leading to the proposal of actionable prevention strategies.

End-to-End GPT-like Model with Custom BPE Tokenizer

- Built a generative transformer model and custom BPE tokenizer from scratch in PyTorch.
- Engineered a full training pipeline with learning rate scheduling, gradient clipping, and dropout.
- Trained on the TinyShakespeare dataset, using perplexity to evaluate and validate text generation.

Transformer Architecture Re-implementation

- Re-implemented the "Attention Is All You Need" Transformer from scratch, including multi-head attention and positional encoding.
- Trained the model for machine translation, achieving a competitive BLEU score through hyperparameter tuning.
- Published well-documented code on GitHub for public use.

Education

University Institute of Technology-RGPV | Bhopal, MP

2020 - 2024

Bachelor of Technology, Computer Science Engineering

- **GPA:** 7.85/10
- **Coursework:** Machine Learning, Data Structures & Algorithms, Data Mining, Statistical Analysis

Technical Skills

- **Languages:** Python (Advanced), SQL
- **AI/ML:** PyTorch, TensorFlow, Scikit-learn, NLP, Transformers, Computer Vision
- **Data Tools:** Pandas, NumPy, Matplotlib, Seaborn, BeautifulSoup
- **Developer Tools:** Git, VS Code, Streamlit, MySQL