Arjun Panse
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Professional Summary

Machine Learning Engineer specializing in NLP, LLMs, Deep Learning, and RAG systems. Expertise in PyTorch, TensorFlow, Hugging Face Transformers, and production ML pipelines. Proven experience in Reinforcement Learning, backend development with Spring Boot, REST APIs, and database optimization.

Education

- **Savitribai Phule Pune University** — Pune, India
  Bachelor of Engineering in Information Technology; GPA: 9.32/10.0 (Class Rank: 4) — *Sept. 2024 – May 2027*
- **Government Polytechnic Pune** — Pune, India
  Diploma in Computer Engineering; GPA: 9.52/10.0 — *Aug. 2021 – May 2024*

Technical Skills

- **Programming:** Python, Java, C++, C, SQL, JavaScript, HTML, CSS
- **ML/AI:** Large Language Models (LLMs), Natural Language Processing (NLP), Deep Learning, Neural Networks, Reinforcement Learning (PPO, Q-Learning), Retrieval-Augmented Generation (RAG), Computer Vision, Transfer Learning, Fine-tuning, Sentiment Analysis, BERT, GPT, BART, LSTM, CNN, RNN, Named Entity Recognition (NER)
- **Frameworks:** PyTorch, TensorFlow, Keras, Scikit-learn, Hugging Face, LangChain, OpenAI API, spaCy, NLTK, XGBoost, Spring Boot, Node.js, Express.js, React
- **Databases/Tools:** MySQL, PostgreSQL, MongoDB, Neo4j, Redis, FAISS, Vector Databases, Git, Docker, Linux, CI/CD, Agile
- **Other:** REST API, Microservices, JWT, Spring Data JPA, Hibernate, NumPy, Pandas, JUnit, TDD, A/B Testing

Professional Experience

- **The Bodhi Tree** — Remote
  Artificial Intelligence Engineer Intern — *Sept. 2025 – Present*
  - Built end-to-end RAG and LLM pipelines with multimodal support (text, image, audio) using LangChain, FAISS vector databases, and semantic search, achieving 28% improvement in contextual understanding through optimized embeddings and retrieval algorithms
  - Developed transformer-based NLP models (BERT, GPT) with custom attention mechanisms for emotion-aware sentiment analysis and text classification, improving accuracy by 15% via transfer learning and fine-tuning using PyTorch and Hugging Face
  - Implemented production ML pipelines with data preprocessing, feature engineering, model evaluation (F1-score, precision, recall), hyperparameter tuning, and integrated computer vision and speech processing models for multimodal AI analysis
- **Infeaneat Digital Media** — Pune, India
  Backend Software Engineer Intern — *May 2023 – Jul. 2023*
  - Architected scalable Spring Boot REST API microservices with 15+ endpoints, JWT authentication, and MySQL database supporting 500+ concurrent users with 99.5% uptime; optimized queries and indexing to improve database performance by 35%, reducing API latency from 450ms to 180ms
  - Achieved 85% code coverage using JUnit and Mockito through Test-Driven Development (TDD), implementing unit testing, integration testing, and code reviews following Agile methodology with Spring Data JPA, Hibernate ORM, and connection pooling

Technical Projects

- **Self-Learning Curriculum Engine for LLMs using Reinforcement Learning** — *Oct. 2025*
  - Developed autonomous RL framework using Proximal Policy Optimization (PPO) and policy gradients enabling LLMs to self-evaluate and generate adaptive curriculum, achieving 22% accuracy improvement on benchmark NLP tasks — *Python, PyTorch, RL, Hugging Face, PPO, Q-Learning, Neural Networks*
- **DRONA – Predictive Maintenance System for Aircraft Using ML** — *Jan. 2025 – Present*
  - Engineered predictive analytics using Kalman Filters and LSTM networks for time-series forecasting on 50+ aircraft component sensors, predicting failures 48-72 hours ahead with 87% accuracy and ¡5s latency — *Python, TensorFlow, Keras, LSTM, RNN, Anomaly Detection, Pandas, NumPy*
- **Briefly – AI Discord Bot for Abstractive Summarization** — *Apr. 2025 – May 2025*
  - Built Discord bot using BART transformers for summarizing 1000+ message conversations with 92% coherence; optimized latency from 8s to 1.2s (85% reduction) via Redis caching, multi-threading, and batch processing — *Python, Discord API, BART, Redis, NLG*