Abhijit Dalal

B.Tech Electronics Engineering | Roll No.: 241060901

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Education

Veermata Jijabai Technological Institute (VJTI) **2027**

B.Tech in Electronics Engineering

Minor in Artificial Intelligence and Machine Learning

Government Polytechnic Nashik **2024**

Diploma in Electronics & Tele-communication Engineering *90.88%*

Projects

Skrolla | AI-Native Book Discovery App Web **Jun 2026 – Jul 2026**

- TikTok-style scrolling discovery for books: recommendations driven by embeddings and math, generative AI used for the chat experience.
- Embedded ∼75K books as 768-dim vectors (SigLIP2 on cover art + bge-base-en-v1.5 on text, weighted concat, PCA-reduced from 1536-dim to fit storage constraints); recommendations served by nearest-neighbor search over a per-user taste vector updated in real time from scroll, dwell, and save signals.
- Shipped the native Android app end-to-end, wired to a live Supabase + pgvector backend, and "StoryMode," an LLM chat layer (Gemini via Firebase and groq API) that lets users ask questions about a book before committing to it.

Kotlin, Jetpack Compose (MVVM), Python, SigLIP2, Sentence-Transformers, Supabase (pgvector), Cloudflare R2, Gemini via Firebase AI Logic

Play Store App Analysis | Market Research over 3.45M Apps GitHub **Apr 2026 – May 2026**

- Built a queue-based scraper collecting a fresh 11K-app dataset across 10 country, and queried a 3.45M-row 2022 archive entirely through DuckDB (never materialized in pandas) to compare market structure, monetization, and regional demand across a 4-year gap.
- Authored an 8-module script-based analysis pipeline (parquet-cached aggregates, static and interactive charts) that renders a single HTML report synthesizing opportunity signals into concrete app-build recommendations.

Python, DuckDB, PostgreSQL, pandas, Plotly, Matplotlib

Autonomous Racing using Deep RL | PPO Agents in 2D & 3D GitHub **Jan 2026 – Mar 2026**

- Reinforcement learning agents that learn to drive from scratch, first in a 2D simulator, then scaled into a full 3D game engine.
- Trained a PPO agent (CNN policy, 4-frame stack) on Gymnasium `CarRacing-v3` to consistently complete full laps from raw pixel input; scaled the pipeline into a 3D Unity ML-Agents environment with custom C# scripts for agent observations, reward shaping, and race-flow control.

Python, PyTorch, Stable-Baselines3, Gymnasium, Unity ML-Agents, C#

Harry Potter GPT | Full LLM Fine-Tuning Pipeline on nanoGPT GitHub **Oct 2025 – Dec 2025**

- A base GPT-2 taken through the complete modern LLM training recipe: pretrain, fine-tune, then align with human preference.
- Engineered the 3-stage pipeline on GPT-2 (124M params): continued pretraining on ∼2M tokens → supervised fine-tuning on 4,321 examples (val loss 2.33) → DPO (RLHF) alignment on 347 curated preference pairs; converted nanoGPT checkpoints to HuggingFace format, resolving Linear/Conv1D weight transposition for TRL compatibility.

Python, PyTorch, HuggingFace Transformers, TRL, nanoGPT

Internship

Rishabh Instruments Limited **Jan 2024 – Apr 2024**

Internship Trainee, Digital Production Department *Nashik*

- Assisted in the assembly, testing, and calibration of digital metering instruments, ensuring compliance with quality standards.
- Diagnosed faults and troubleshot electronic circuits on the production line, documenting processes throughout.

Achievements

Kaggle Bronze Medal, Google Play Store App Dataset 2026, 11K apps collected across 10 countries **2026**

Runner-up, Laghu Udyog Bharti (LUB), Hand Gesture Recognition System, real-time ASL recognition (OpenCV, MediaPipe, Raspberry Pi), diploma capstone **2024**

Positions of Responsibility

Class Representative (CR), EXTC Engineering Diploma Class, Government Polytechnic Nashik **2021 – 2024**