DJS CodeAI – Official Club

Information

Artificial Intelligence Club at Dwarkadas J. Sanghvi College of Engineering
Academic Year 2025–26

July 25, 2025

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1. Introduction to DJS CodeAI

DJS CodeAI is the official Artificial Intelligence Club at Dwarkadas J. Sanghvi College of Engineering, established in the Academic Year 2024–25. We are a dynamic, student-led community passionately dedicated to exploring the frontiers of artificial intelligence and coding. Our core mission is to bring together enthusiastic individuals to learn, create, and innovate in the rapidly evolving domain of AI.

We recognize that traditional classroom learning, while essential, often doesn't provide the hands-on experience crucial for students to excel in AI. To address this, DJS CodeAI serves as a collaborative space designed to bridge the gap between theoretical knowledge and practical, real-world applications of machine learning. By being a part of our club, students have the unique opportunity to transform their passion for machine learning into tangible expertise, positioning them at the forefront of technological innovation and excellence in the world of AI.

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2. Our Aim

Our primary aim is to empower students with practical expertise in Artificial Intelligence. We achieve this by providing a robust collaborative platform for:

- **Hands-on learning:** Engaging students directly with AI concepts through practical application.
- **Real-world project development:** Working on impactful projects that solve actual problems.
- **Skill-building workshops:** Equipping members with industry-ready AI and coding skills.

Through these initiatives, we foster innovation and meticulously prepare our members for successful and impactful careers in the fields of AI and technology.

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3. Our Vision

The vision of DJS CodeAI is to cultivate a dedicated community that thrives on innovation, collaboration, and hands-on learning in the expansive field of Machine Learning. We are committed to bridging the gap between theoretical understanding and practical application by providing students with unparalleled opportunities to:

- Work on real-world AI projects.
- Collaborate closely with peers.

- Receive invaluable mentorship from experienced individuals within the club and beyond.

DJS CodeAI is designed to be the definitive platform for students to develop cutting-edge skills in AI, ensuring they are well-prepared to emerge as the next generation of AI leaders and innovators.

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4. Our Curriculum

DJS CodeAI offers a comprehensive curriculum designed to equip members with cutting-edge AI and machine learning skills. Our workshops and sessions cover a wide range of topics, including:

- **Exploratory Data Analysis (EDA):** Data cleaning, visualization (histograms, heatmaps), statistical analysis (PCA, hypothesis testing).
- **ML Fundamentals – Supervised Learning:** Linear regression, logistic regression, evaluation metrics (ROC-AUC, F1-Score), decision trees, k-NN, SVM.
- **ML Fundamentals – Unsupervised Learning:** K-Means, hierarchical clustering, elbow method, DBSCAN, Gaussian Mixture Models, t-SNE.
- **ML Fundamentals – Ensemble Learning:** Random Forests, XGBoost, CatBoost.
- **ML Fundamentals – Regularization and Advanced Metrics:** L1/L2 regularization, ElasticNet, cross-validation.
- **Deep Learning – Neural Networks:** Artificial Neural Networks (ANNs), backpropagation, activation functions (ReLU, Sigmoid).
- **Deep Learning – Convolutional Neural Networks (CNNs):** Convolution, pooling, architectures like LeNet and ResNet.
- **Deep Learning – Recurrent Neural Networks (RNNs):** LSTM, GRU, backpropagation through time (BPTT).
- **Deep Learning – Advanced Architectures:** Inception, attention mechanisms, transformers.
- **Deep Learning – Hyperparameter Tuning:** Weight initialization, Adam optimizer, dropout techniques.
- **Computer Vision – Image Processing:** Filters, Canny edge detection, SIFT/ORB using OpenCV.
- **Computer Vision – Object Detection:** YOLOv8, Faster R-CNN.
- **Computer Vision – Image Segmentation:** U-Net, Mask R-CNN.
- **Computer Vision – Generative Models:** DCGAN, CycleGAN.
- **NLP – Text Preprocessing:** Tokenization, lemmatization, stopwords, SpaCy.
- **NLP – Vectorization:** TF-IDF, Word2Vec, FastText, BERT embeddings.
- **NLP – Transformers:** BERT, RoBERTa, fine-tuning with Hugging Face.
- **GenAI – GANs:** WGAN, StyleGAN for image generation.
- **GenAI – LangChain:** Chains, agents, LLM-based applications.

- **GenAI – Fine-Tuning LLMs:** Hugging Face Trainer, T5, domain-specific tasks.

These topics are delivered through hands-on workshops, guided by experienced mentors, to ensure members gain practical, industry-relevant skills in AI and machine learning.

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5. Club Structure and Operations (A.Y. 2025–26 Revised)

Our club is led by a dedicated team committed to fostering a vibrant AI community:

- **Faculty Advisor:** Prof. Ragini Mishra
- **President:** Krishil Parikh
- **Vice-President:** Krisha Maisheri
- **Secretary:** Rishee Panchal
- **Admin:** Deep Mehta
- **Tech Web Dev:** Manav Gohil (portfolio-inky-rho-61.vercel.app)
- **TechAI:** Keyush Nisar (portfolio-keyush.vercel.app), Bhavya Goyal (bhavyagoyal777.github.io), Taitil Chheda (taitilchheda.netlify.app), Rugved Kulkarni (portfolio-rugved-git-main-rugved-kulkarnis-projects.vercel.app)
- **Project Head:** Manav Jobanputra
- **Marketing Head:** Rihen Moradia
- **Event Head:** Netra Sangani
- **Creative Head:** Vruddhi Zaveri
- **Coordinator (DJS-Trinity):** Manav Jobanputra
- **Social Representative (DJS-NSS):** Netra Sangani

5.1 Membership & Meetings

- **Eligibility:** Second-year students from all branches are eligible to apply.
- **Application Process:** Interviews will be conducted for prospective members. Specific dates for interviews are to be decided and will be announced.
- **Meetings:** Club meetings will be held once a week, both offline and online for flexibility. Confirmed timings are yet to be announced.

5.2 Mentor-Mentee System

A cornerstone of DJS CodeAI is our structured Mentor-Mentee System. This ensures comprehensive guidance and accelerated skill development through close interaction between mentors and mentees.

- Mentees will be assigned challenging tasks weekly.
- Tasks will be evaluated using an advanced AI scoring system.

- A transparent leaderboard will track progress, recognize achievements, and foster healthy competition.

5.3 Activities and Benefits

Through workshops, projects, and collaborative activities, DJS CodeAI members will:

- Gain hands-on experience in cutting-edge AI technologies.
- Develop critical AI skills highly sought after in the industry.
- Build a robust portfolio of real-world projects.

These experiences prepare members for successful, dynamic careers at the forefront of technological innovation.

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6. Notable Mentor Projects

6.1 Voice-Driven Multi-Agent Finance Assistant

- **Description:** Orchestrated specialized AI agents using MCP for seamless communication, delivering spoken market briefs via Deepgram voice integration. Built RAG pipeline with FAISS vector database for real-time portfolio analysis and implemented LSTM/XGBoost price prediction with fine-tuned DistilBERT sentiment analysis.
- **Tech Stack:** Python, FastAPI, MCP, RAG, DistilBERT, Deepgram, FAISS, LSTM, XGBoost
- **GitHub:** Finance_Agent
- **Live Demo:** finance-buddy

6.2 MindCompanion Mental Health AI Platform

- **Description:** Full-stack GenAI solution for mental wellness with multilingual AI therapist and tone-adaptive responses. Real-time sentiment analysis, WhatsApp distress bot, community platform with therapy games and progress tracking.
- **Tech Stack:** Flask, BERT, CNN, MongoDB, Whisper, Python, Selenium, HTML, CSS, JavaScript
- **GitHub:** MindCompanion

6.3 Affective Contextual Analysis Framework (ACAF)

- **Description:** Multimodal emotion analysis using XLM-RoBERTa for text, Wav2Vec 2.0 for audio, TimeSformer for video. GNN-based context modeling, federated learning, edge-optimized TensorFlow Lite inference with SHAP explainability. 20% F1-score improvement.
- **Tech Stack:** Python, PyTorch, Transformers, CNNs, GNNs, XLM-RoBERTa, Wav2Vec 2.0, TimeSformer, TensorFlow Lite, SHAP
- **GitHub:** ACIN

6.4 Deep Generative Models

- **Description:** Collection of deep generative model implementations from scratch (GANs, VAEs, Diffusion Models, Flows) with visual outputs, loss curves, and documentation.

- **Tech Stack:** PyTorch
- **GitHub:** deep-generative-models

6.5 FinteX Financial Analysis System

- **Description:** Automated financial analysis tool leveraging Agents Swarm, Gemini Flash, FinBERT, and VAE for anomaly detection.
- **Tech Stack:** Agents Swarm, Exa Search, Gemini Flash, Firecrawl, VAE, FinBERT
- **Award:** 2nd Runner-up at Data2Knowledge Datathon
- **GitHub:** D2K_jinx.js

6.6 Paper Implementations

- **Description:** Implemented components and architectures from foundational papers like LLaMA, ORPO, DPO, GPT-2, Mixtral, SPO, and Vision Transformers. Focused on distillation, Mixture of Experts, RoPE, and efficiency techniques.
- **Tech Stack:** PyTorch, Huggingface, unsloth, PEFT, Bits and Bytes, Distributed Data Parallel
- **GitHub:** IMPLEMENTING-RESEARCH-PAPERS

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7. Upcoming Events

7.1 Roadmap to Becoming an AI Engineer Seminar

- **Description:** Exclusive seminar to ignite your path to becoming a cutting-edge AI Engineer, guided by our expert mentors.

Further events will be announced through official channels.

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8. Connect with DJS CodeAI

We encourage all interested students and potential collaborators to reach out!

- **Instagram:** djs_codeai
- **Email:** contact.djscodeai@gmail.com

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9. Collaboration

DJS CodeAI is open to collaboration with other clubs, departments, and external organizations. Interested parties can contact us via email or other college contact details.