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FC-26, SHASTRI PARK, NEW DELHI.

Department of Artificial Intelligence and Machine Learning

Dated: 15/10/2025

REPORT

AIML Project Exhibition

Date of Event: 15th October 2025

Venue: 2nd Block

PROJECT 1

Title: Pulse Point – Smart Health Monitoring System

Members: Anushka Jain, Shreyas Bhagat and Team Kritrim Dhi

Objective:
Develop an AI-powered health monitoring system capable of real-time analysis of vital signs (pulse rate, oxygen levels, temperature) to offer predictive health insights and emergency alerts for elderly care.

Key Learnings & Outcomes:
- Practical experience in AI-driven sensor data integration and real-time health monitoring pipelines.
- Implemented machine learning models for anomaly detection and health risk prediction.
- Gained insight into IoT-based data acquisition and cloud-hosted AI analytics platforms for patient monitoring.

Description:
Pulse Point is engineered on an edge computing device that interfaces with health monitoring hardware to continuously capture vital physiological data. This data is securely transmitted to a cloud-based AI system for processing and visualization. Advanced classification algorithms detect abnormal health patterns and trigger alerts via mobile or web applications. Integration with real-time database services facilitates seamless patient monitoring and telemedicine support, enabling proactive and intelligent elderly healthcare solutions.

PROJECT 2

Title: Tax-Ease – AI-Powered Tax Assistant

Members: Hardik Gupta, Yash Kumar and Team Kritrim Dhi

Objective:
To design an intelligent tax computation and advisory system that automates income tax calculation, detects applicable deductions, and provides optimized filing suggestions based on user data.

Key Learnings & Outcomes:

- Applied **Natural Language Processing (NLP)** for understanding tax-related queries.
- Developed **regression and rule-based models** for accurate tax estimation.
- Learned **data preprocessing and entity extraction** techniques for financial datasets.

Description:
Tax Ease utilizes an **AI-driven text understanding engine** to interpret user inputs such as salary, investment, and expense details. It applies relevant tax rules using **Python-based logic layers** and generates detailed computation reports. The model employs **NLP pipelines with spaCy** for information extraction and **decision tree algorithms** for deduction recommendations. A user-friendly **Flask web interface** enables easy interaction with the system.

PROJECT 3

Title: Netflix Recommendation System

Team Members: Pallav Das and Team Kritrim Dhi

Objective:
To develop a recommendation engine that suggests personalized movies and TV shows to users based on viewing history, ratings, and content similarity.

Key Learnings & Outcomes:

- Learned **collaborative filtering and content-based filtering techniques**.
- Implemented **cosine similarity and matrix factorization** algorithms.
- Built **data visualization and recommendation pipelines** using Python.

Description:
The Netflix Recommendation System leverages **collaborative filtering** to analyze user-item interactions and **content-based approaches** for similarity scoring. It uses the **TMDB dataset** for metadata such as genres, cast, and ratings. The system computes recommendations through **cosine similarity** and **Singular Value Decomposition (SVD)**, generating dynamic lists of top suggestions. The frontend dashboard is implemented using **Streamlit** for interactive user experience.

PROJECT 4

Title: Text-to-Math Converter

Team Members: Harsh Jain and Team Kritrim Dhi

Objective:
To develop an AI model capable of converting natural language mathematical expressions into executable mathematical equations for automated solving.

Key Learnings & Outcomes:
- Implemented **sequence-to-sequence (Seq2Seq) neural networks** for text translation.
- Gained understanding of **transformer architectures and tokenization techniques**.
- Practiced model training using **TensorFlow** and **PyTorch frameworks**.

Description:
The Text-to-Math project employs a **neural translation model** trained on paired datasets of text and mathematical expressions. The model converts sentences like *"add five and ten"* into *"5 + 10"*. It leverages **attention mechanisms** for contextual understanding and **beam search** for optimal equation generation. The interface allows users to input expressions and obtain both symbolic equations and computed results in real time.

PROJECT 5

Title: Customer Churn Prediction System

Team Members: Aniket and Team Kritrim Dhi

Objective:
To build a machine learning model that predicts whether a customer is likely to discontinue a service or subscription, helping businesses enhance customer retention strategies.

Key Learnings & Outcomes:
- Applied **supervised learning techniques** including logistic regression, random forest, and XGBoost.
- Developed expertise in **data preprocessing, feature engineering, and model evaluation**.
- Understood **business analytics applications** of machine learning in customer behavior modeling.

Description:
The Customer Churn Prediction System uses a structured dataset of customer demographics, usage patterns, and feedback history. After preprocessing and scaling, various classifiers are trained and compared using metrics like accuracy, recall, and ROC-AUC. The best-performing model is deployed via a **Flask API**, providing real-time churn risk prediction and visual insights using **Matplotlib** and **Seaborn dashboards**.

PROJECT 6

Title: Next Word Predictor

Members: Anurag, Zubair and Team Kritrim Dhi

Objective:
To build a predictive text model capable of suggesting the next probable word in a sequence, similar to the autocomplete systems used in keyboards and chatbots.

Key Learnings & Outcomes:
- Applied deep learning techniques using LSTM and GRU networks.
- Developed understanding of language modeling and text tokenization.
- Learned training optimization, sequence padding, and perplexity evaluation.

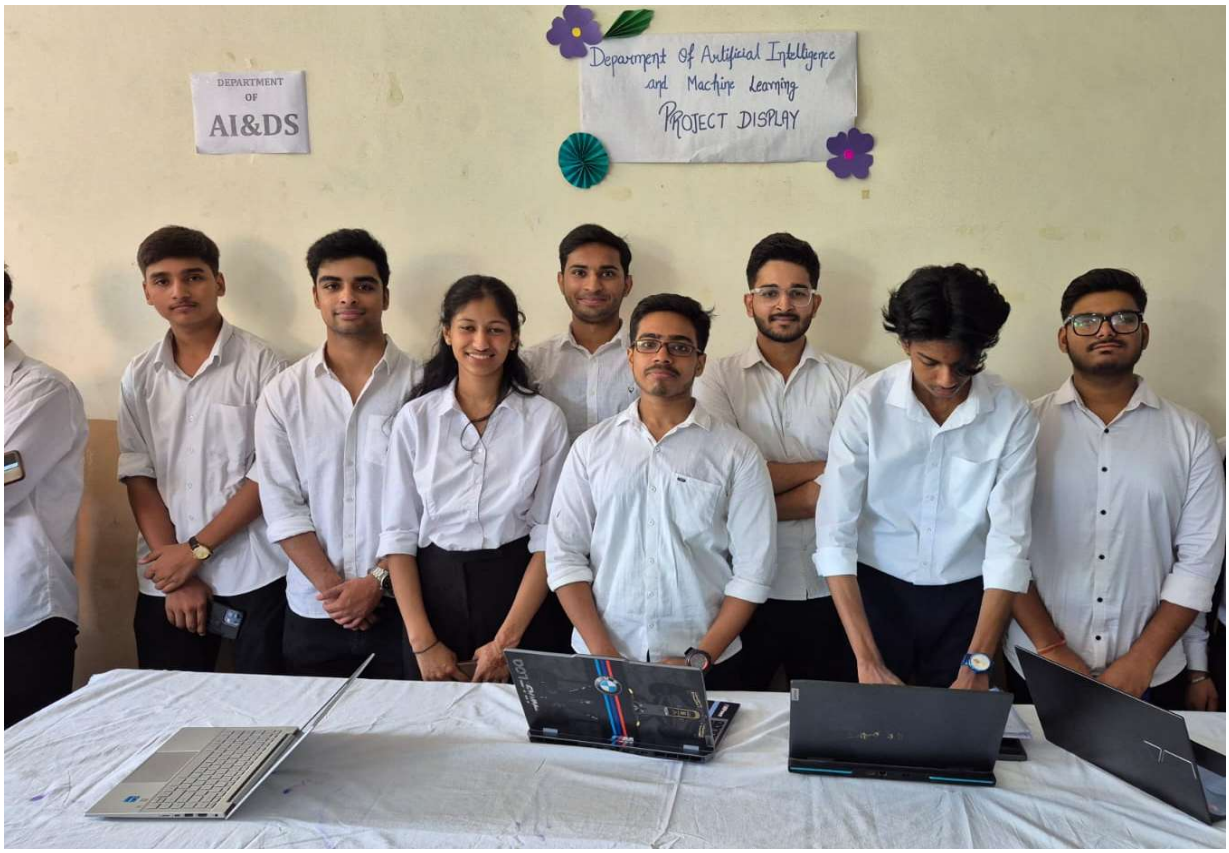
Description:
The Next Word Predictor utilizes a Long Short-Term Memory (LSTM) based neural network trained on large text corpora. It predicts subsequent words by analyzing context and sequential dependencies between tokens. The model is built using TensorFlow/Keras, with preprocessing handled through Tokenizer and Word Embedding layers. The deployed version features a simple text interface that dynamically suggests next-word completions as the user types.

HIGHLIGHTS


AIML PROJECT


PROJECT DISPLAY


Department of Artificial Intelligence and Machine Learning
PROJECT DISPLAY



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