



# DEPARTMENT OF APEX INSTITUTE OF TECHNOLOGY

## AML LAB PROJECT PROPOSAL

<b>Project Title:</b>	Movie Recommendation System
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**Project Scope:** Our project scope includes collecting comprehensive movie data, employing advanced algorithms for precise recommendations, creating a user-friendly interface, and ensuring real-time updates. We prioritize user satisfaction through continuous feedback and maintain strict data privacy measures. Our goal is to redefine movie discovery, offering effortless and enjoyable recommendations for users.

i) **Overview:** Our project, Smart Movie Suggestions, does just that. It uses clever technology to recommend movies personalized to your liking. No more endless scrolling or guessing – it's like having a movie expert at your fingertips. With a user-friendly interface and real-time updates, you'll discover great films effortlessly.

### ii) **Objectives:**

- Developing a recommendation system that surpasses existing solutions in terms of accuracy and personalization.
- Enhancing the user experience by providing insights into why a particular movie is recommended.
- Keeping recommendations up-to-date and relevant in the fast-paced world of entertainment.
- Maximize user satisfaction through continuous feedback and improvement.
- Create an intuitive user interface for effortless interaction and customization of preferences.
- Implement explainable AI to provide users with insights into why a particular movie is recommended.

### iii) **Dataset:** We utilize two primary datasets:

- **tmdb\_5000\_movies:** Contains comprehensive movie information like titles, genres, keywords, and overviews.
- **tmdb\_5000\_credits:** Provides data on cast and crew members, including their roles and names.

### iv) **Constraints:**

- **Data Quality:** Ensuring accurate and diverse movie data is paramount for reliable recommendations.
- **Scalability:** Building a system that can handle a growing movie library and user base without performance issues is essential.
- **Privacy and Security:** Safeguarding user data while delivering personalized recommendations is a top priority.
- **Real-Time Updates:** Keeping recommendations current with changing trends and preferences requires robust real-time data integration.

- **Explainability:** Balancing advanced AI-driven recommendations with user-friendly, transparent explanations presents a unique challenge.

v) **Methodology:**

- Data Collection & Preprocessing: Gather and clean movie data.
- Feature Engineering: Extract relevant movie features.
- Recommendation Algorithms: Implement ML/DL algorithms.
- User Interface Design: Create an intuitive interface.
- Real-Time Data Updates: Incorporate real-time data.
- Explainable AI (XAI): Use XAI models for transparency.
- Deployment & Scaling: Deploy and ensure scalability.
- Monitoring & Maintenance: Continuously monitor and update the system.

**Requirements:**

Hardware Requirements

1. Memory
2. Storage
3. GPU
4. Internet

Software Requirements

1. Python
2. Scikit-Learn
3. Web Hosting Service
4. Web Framework
5. Jupiter Notebook
6. APIs

**STUDENTS DETAILS**

Name	UID	Signature
Abdullah Khan	21BCS10510	
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**APPROVAL AND AUTHORITY TO PROCEED**

We approve the project as described above, and authorize the team to proceed.

Name	Title	Signature (With Date)