

Name: _____ () Date: _____

Project Overview:

The AI Course Project is a comprehensive opportunity for students to apply their knowledge of artificial intelligence to solve real-world problems. This project constitutes 35% of the overall grade for this module, will challenge students to design, develop, and deploy AI systems that address specific issues.

Project Goals:

1. **Application of AI Concepts:** Apply the fundamental concepts of artificial intelligence, machine learning, and deep learning to solve a real-world problem.
2. **Domain Selection:** Choose a specific domain or area of interest where AI can be applied effectively.
3. **Problem Definition:** Define a clear and well-scoped problem within the chosen domain that can be addressed using AI techniques. The problem should be non-trivial and have societal relevance.
4. **Data Collection and Preparation:** Collect or identify appropriate data sources and prepare the data for training and testing machine learning models.
5. **Model Development:** Develop neural network AI models to solve the defined problem. Implement and fine-tune these models.
6. **Evaluation:** Evaluate the performance of the AI models using relevant metrics and techniques. Ensure rigorous testing and validation.
7. **Deployment:** Deploy the AI system or App in a suitable environment or platform. Create a user-friendly interface. For example, you can allow user to do classification or regression using Web Application Using Flask.
8. **Enhancing School Community:** Incorporate features or aspects in the project that contribute to the school community, such as enhancing school operations, providing useful tools for students or teachers, or addressing local school-related issues. Projects that incorporate this feature will receive a more favorable evaluation.

Below are two possible tracks:

- Track 1: Developing an AI Project
- Track 2: Developing Apps with GPT and ChatGPT
 - Motivation: **Watch video: Opportunities in AI – 2023 (Andrew Ng: Opportunities in AI - 2023 (youtube.com))**
 - The provision of GPT-4 and ChatGPT models behind an API service has introduced new capabilities for developers. It is now possible to build intelligent applications that can understand and respond to natural language. LLMs are being used to power a wide **range**

of applications across different industries. At the core of developing LLM-based applications is the integration of LLM with the OpenAI API.

- **This track will incur additional development cost.**
- **Any LLM model API is allowed.**

Project Requirements:

- ✓ Ideally, each team is comprising of two members.
- ✓ Project Proposal: Submit a project proposal that outlines the chosen domain, problem statement, data sources, and initial approach. All projects must be approved and confirmed by your tutor. You should not use projects that you have done before in your ARP or competitions. Failure to comply will result in substantial penalty of marks.
- ✓ Data Ethics: Ensure that data used in the project adhere to ethical guidelines and respect privacy and consent. Provide appropriate data citations.
- ✓ Technical Documentation: Maintain clear and organized documentation throughout the project, including code, model descriptions, data sources, and project reports.
- ✓ Presentation: Deliver a final presentation summarizing the project's goals, methodology, results, and the impact.
- ✓ Project Report: Submit a detailed project report that includes problem formulation, data collection and preparation, model development, evaluation and deployment.
- ✓ Community Enhancement Component: Projects that demonstrate a clear and tangible impact on the school community will receive up to 10%.

Assessment Criteria:

Projects will be assessed based on the following criteria:

- Problem Definition and Significance
- Data Collection and Preprocessing
- Model Development and Performance
- Ethical Considerations
- Deployment and User Interface (if applicable)
- Documentation Quality
- Presentation and Communication Skills
- Peer evaluation
- Community Enhancement Component

Timeline:

- Project Proposal Submission: [T1W6]
- Project Prototype (15%): [T2W1]
- Project submission: [10 April, Early bird +5%], [15 April, normal submission]

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- Project Presentation: [T2W4 – T2W5]

What to submit?

- Work Distribution Matrix form (signed by both members agreeing on the work done by each member.)

Sample Layout:

Work Description	Student A	Student B
Project Brainstorm		
Dataset sourcing		
Data cleaning		
Training Data		
Presentation slides		
Report Writing		
Video Presentation		
Project development		
Signed by:		

- Project report (Max 20 pages)
 - o Objective
 - o Development Processes and Tools Use
 - o Application of concepts and techniques
 - o Results and findings
 - o Screenshots and diagrams
 - o Conclusion and Recommendations
 - o Reflection
 - o Source of Reference (Not included in the number of pages)
- Project source code with working system.
- Instructions on how to execute deliverables.
- Presentation Slides
- Recorded Video Presentation in .mp4
- Demo Videos (If any)
- All submissions should be zipped and uploaded to Coursemology.

Project Grading Rubrics (Weightage 35% of Overall Module Grade)

- Proposal (*Any changes to project after confirmation will result in penalty of marks*)
- Meeting Objectives
- Difficulty Level
- Creativity and Ingenuity
- Potential Product

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- Application of Technology
- Application of Concepts
- Enhancing School Community
- Deliverables
- Peer review
- Completeness, Correctness & Accuracy
- Report & Analysis
- Individual Presentation

Any late submission will result in a penalty of 1% of the total marks per day, up to 50% of total marks.