CSCE478/878 Project and Research Presentation

Project Requirements

The project is graded on a **scale of 100**:

- **20 points**: Load data and preprocess it.
- **20 points**: Train and test at least **two models successfully**.
- **20 points**: **Comprehensively compare** the performance of different models.
- **20 points**: Write a **2-page summary** of the project, including:
    - The **problem** being addressed.
    - The **models** used.
    - The **performance indicators** compared and a **justification** for the best model.
    - **Pros and cons** of your approach.
- **20 points**: **Peer review** three projects (**code and report**) and write a **paragraph summarizing the strengths and weaknesses** of each.

Additional Information:

- **Recommended group size**: No more than **3 students per group**.
- 📌 **Deadline to submit project code and report**: **April 20, 2025 (4/20/2025)**.
- 📌 **Deadline to submit three peer review reports**: **May 4, 2025 (5/4/2025)**.

Project Topics

CIFAR-10 - Object Recognition in Images

🔗 Kaggle Link

Uber & Lyft Cab Prices Prediction

🔗 Kaggle Link

Multimodal Digit Classification: Multimodal Neural Network (MMNN) on AVMNIST

🔗 GitHub Repository

Research Presentation (CSCE878)

Requirements:

- No more than **3 students per group**. This can be the same course project group.
- Present a **research paper** and provide a **demo of the application**.
- Use **slides** for the presentation; **no report is required**.
- Submit slides in **PDF format on Canvas**.

Grading (100 points):

- **40 points**: Presentation
- **40 points**: Demo
- **20 points**: Submission of slides

Topics/Papers:

- **Out-of-Distribution Detection**
- **Uncertainty Quantification**
- **Interpretable Machine Learning**
- **Clustering beyond K-means**
- **Online Learning & Adaptive Models**
- **Few-Shot and Meta-Learning without Deep Networks**
- **Multimodal Machine Learning**
- **Other topics that focus on fundamental machine learning, *not application-based*.**

📌 **Slides Submission Deadline**: **May 4, 2025 (5/4/2025)**.