CSCI 680 Homework

DUE: May 13, 2025, at 11:59 pm, on Blackboard

Submission: You need to submit both your homework report (detailing the necessary explanations) as a pdf file and your code (a zip file) through Blackboard. The code in your zip file must show the same output as the ones indicated in your submitted homework report, as we will randomly select people's codes to run and see if the results match what they indicated in the homework report.

Overview: For your homework report that involves reading the paper titled "Adversarial Discriminative Domain Adaptation," summarizing it, and then fixing the implementation of ADDA as per this Github repository, the following outline can serve as a comprehensive guideline. This outline is structured to ensure that students address all requirements, from critiquing the paper to debugging and fixing the code implementation.

- **Summary of the Paper, titled "Adversarial Discriminative Domain Adaptation":**
  - Overview of the paper's objectives and contributions.
  - Description of the ADDA framework, including its theoretical foundation and how it addresses domain adaptation.
  - Methodology used in the paper for implementing ADDA.
- **Critical Analysis:**
  - **Strengths:** Discussion of the ADDA framework's strengths, including any novel techniques, its effectiveness in domain adaptation, and comparison with existing methods.
  - **Weaknesses:** Identification of any limitations, potential biases, or areas where the framework could be improved.
- **Replication of Results, Debugging, and Solution:**
  - Description of the approach taken to identify the bug(s) in the code available at this Github repository.
  - Explanation of the bug(s) discovered that prevented successful domain adaptation.
  - Detailed explanation of the solution(s) implemented to fix the problem.

  - Validation of the fixed implementation, including evidence of successfully achieving the targeted domain-adapted accuracy. **Basically, this is asking that you achieve a similar performance of domain adaptation from MNIST (Source) to USPS (target) around 97.63%,** as indicated by the writeup of the Github repository.

- **Conclusion:**
  - Summary of the key findings from the paper critique and code debugging process.

- **Submission Requirements**:
  - The homework report (2-3 pages long, following IEEE Conference Template) that followed the aforementioned guideline.
  - The fixed version of the original GitHub code, ensuring it is well-commented and organized.