CE6146
Introduction to Deep Learning
Final Project

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Overview

- Objectives
  - Leverage deep learning to address real-world medical and bioinformatics challenges.
  - Apply various techniques like classification, regression, clustering, and segmentation on complex datasets.
- Datasets:
  - 6 datasets from Kaggle spanning brain imaging, cancer genomics, and drug sensitivity.
- Deliverables:
  - Presentation: Showcase project findings, methods, and results.
  - GitHub Repository: Include code, documentation, and visualizations to support reproducibility.

Overview of Final Project Datasets

Presentation Date	Dataset	Description
12/11	Drug Resistance in Microbial Strains	Antimicrobial resistance profiles across various bacterial strains, useful for analyzing drug resistance trends.
	Drug Repositioning Dataset	Molecular data and interactions relevant to discovering new therapeutic uses for existing drugs.
	Genomics of Drug Sensitivity in Cancer	Genomic and pharmacological data linking gene expression to drug sensitivity in cancer cell lines.
12/18	Breast Cancer Semantic Segmentation	Breast cancer histology images with annotated regions (e.g., tumor, stroma).
	Brain Tumor Image Dataset	MRI images with tumor segmentation labels.
	Multi-Cancer Dataset	Histopathology images for multiple cancer types, each labeled by cancer type.

Instructions

- Explore Each Dataset:

  Use the URLs to access and download the datasets. Familiarize yourself with the structure and data types.

- Define Your Project:

  Identify a research question or problem that you can solve with your chosen dataset.

- Deliverables:
  - A presentation showcasing your project findings.
  - A GitHub repository with code, documentation, and any necessary visualizations.

Q&A

Thank you!