CSCE 636 - Deep Learning

CSCE 636 - Deep Learning (3 credit hours) Prerequisites: CSCE 633 (Machine Learning) or equivalent, Linear Algebra, Calculus Course Description: Introduction to deep learning methods and applications. Topics include neural networks, convolutional neural networks, recurrent neural networks, autoencoders, generative adversarial networks, and transformer architectures. Learning Objectives: - Understand fundamental concepts of deep learning - Implement neural networks from scratch - Apply deep learning to computer vision and NLP tasks - Use popular deep learning frameworks (PyTorch, TensorFlow) Projects: - Image classification using CNNs - Sentiment analysis with RNNs - Final project on chosen topic Grading: - Projects: 50% - Midterm: 20% - Final: 30%