Computer Science Master Thesis Presentation

Thesis title
StatGenerative Model

Student name
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Examination Committee:
Dr. Micheal Soltys (Advisor), **Dr. Jason Isaacs**

Abstract:

This thesis investigates synthetic data generation for structured tabular datasets by comparing two contrasting approaches: Conditional Tabular GAN (CTGAN) and Adaptive Kernel Density Estimation (AKDE). Using the Dry Beans dataset, we evaluate how well each model reproduces real data distributions, preserves feature relationships, and supports downstream analysis.

A unified, reproducible pipeline is developed to generate and evaluate synthetic data using both statistical and visual methods. Quantitative assessment includes KS-statistics, Wasserstein distance, coverage, variance ratios, and correlation differences. Qualitative evaluation applies overlays, correlation heatmaps, pair plots, and PCA projections.

3:00pm, Tuesday, December 2nd, 2025
Online via Zoom

Join via Zoom: `https://csuci.zoom.us/j/87621689334`

All students and faculty are invited

An Academic Affairs Event