

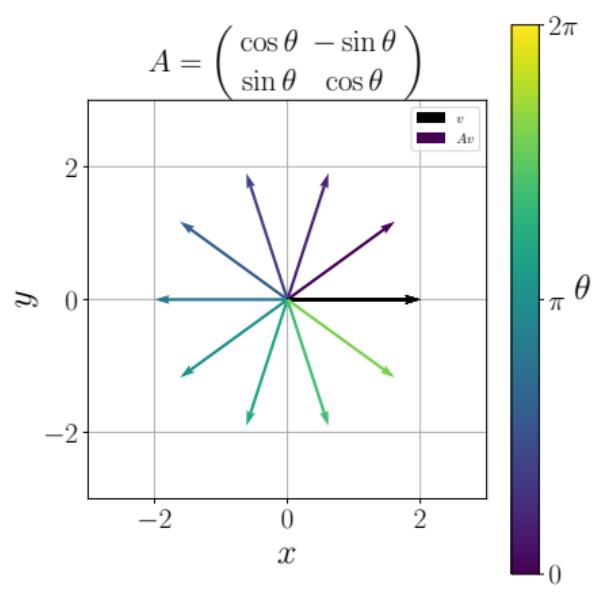
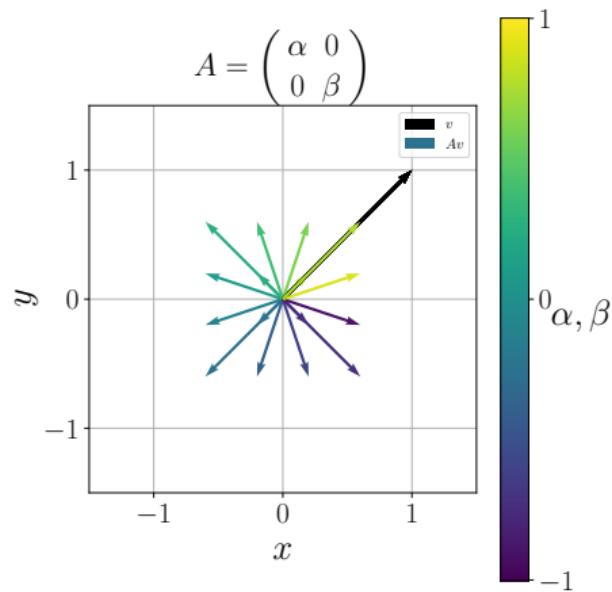
Dimensional Reduction

PHYS 449 - Machine Learning in Physics

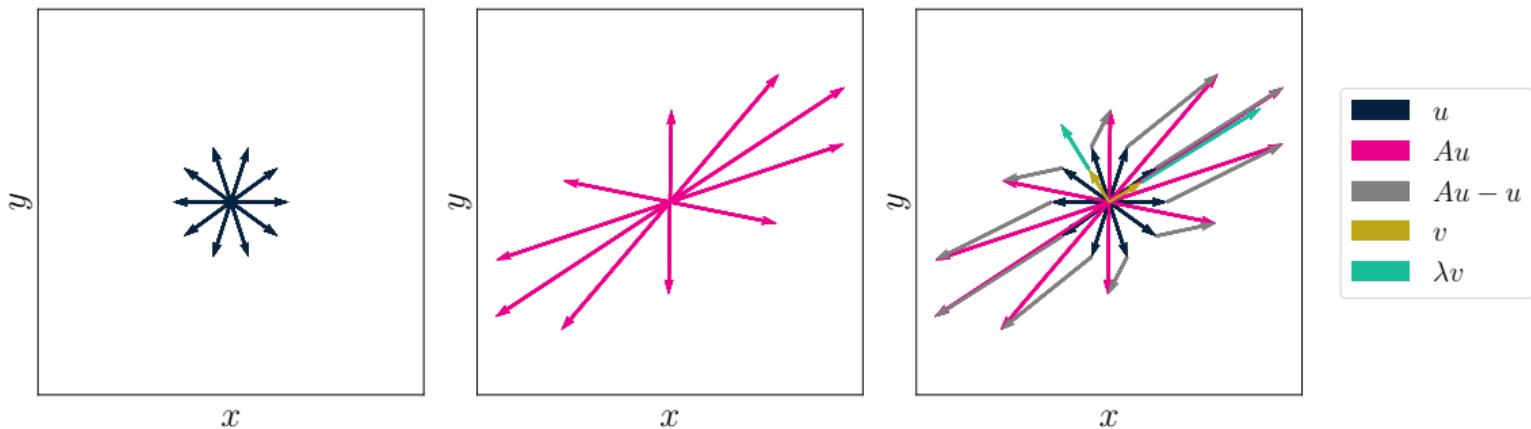
November 4, 2025

Matthew Duschenes

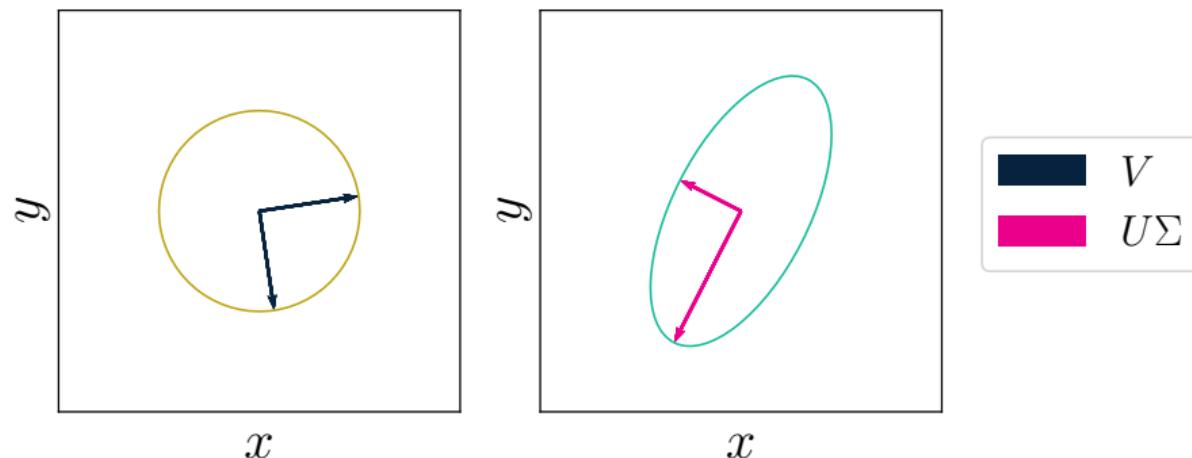
Coordinate Transformations



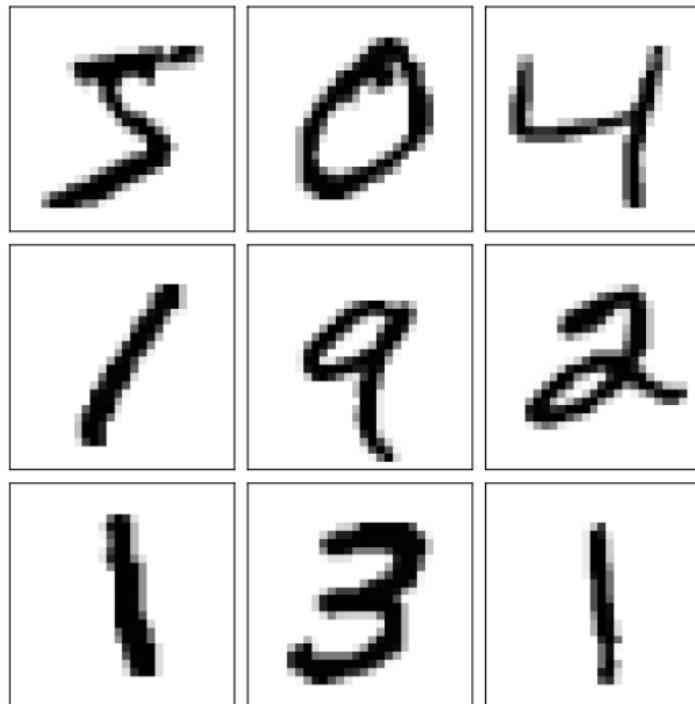
Eigenvalues and Eigenvectors



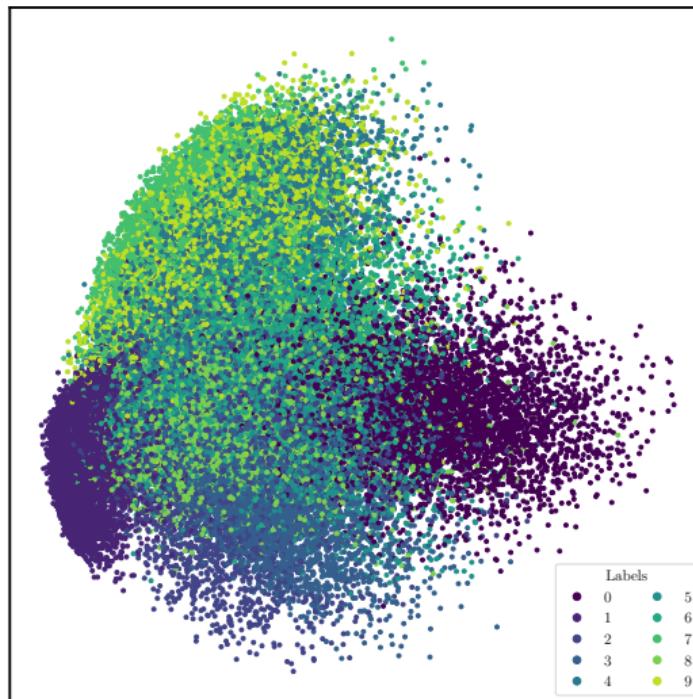
Singular Value Decompositions



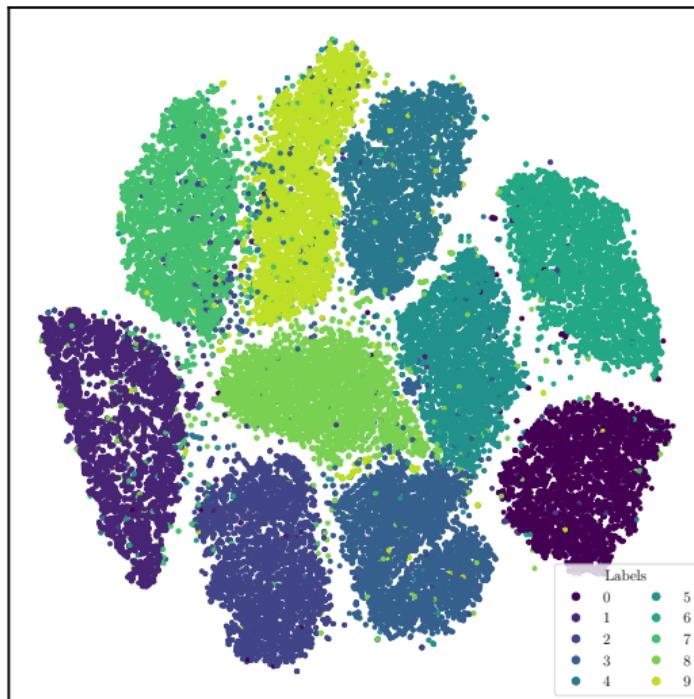
MNIST - Classification



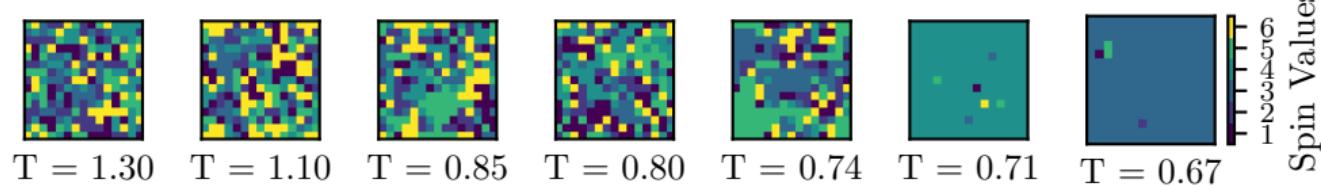
MNIST - PCA



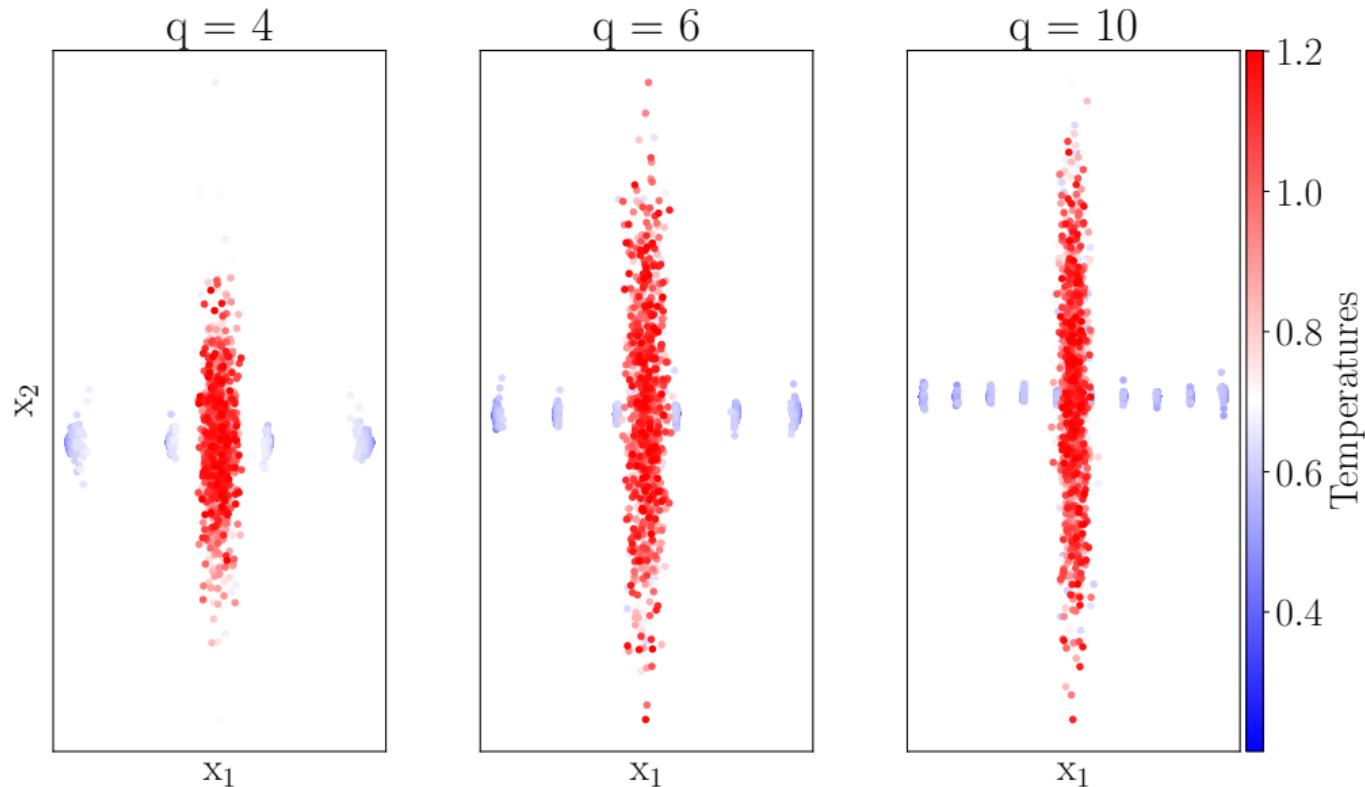
MNIST - t-SNE



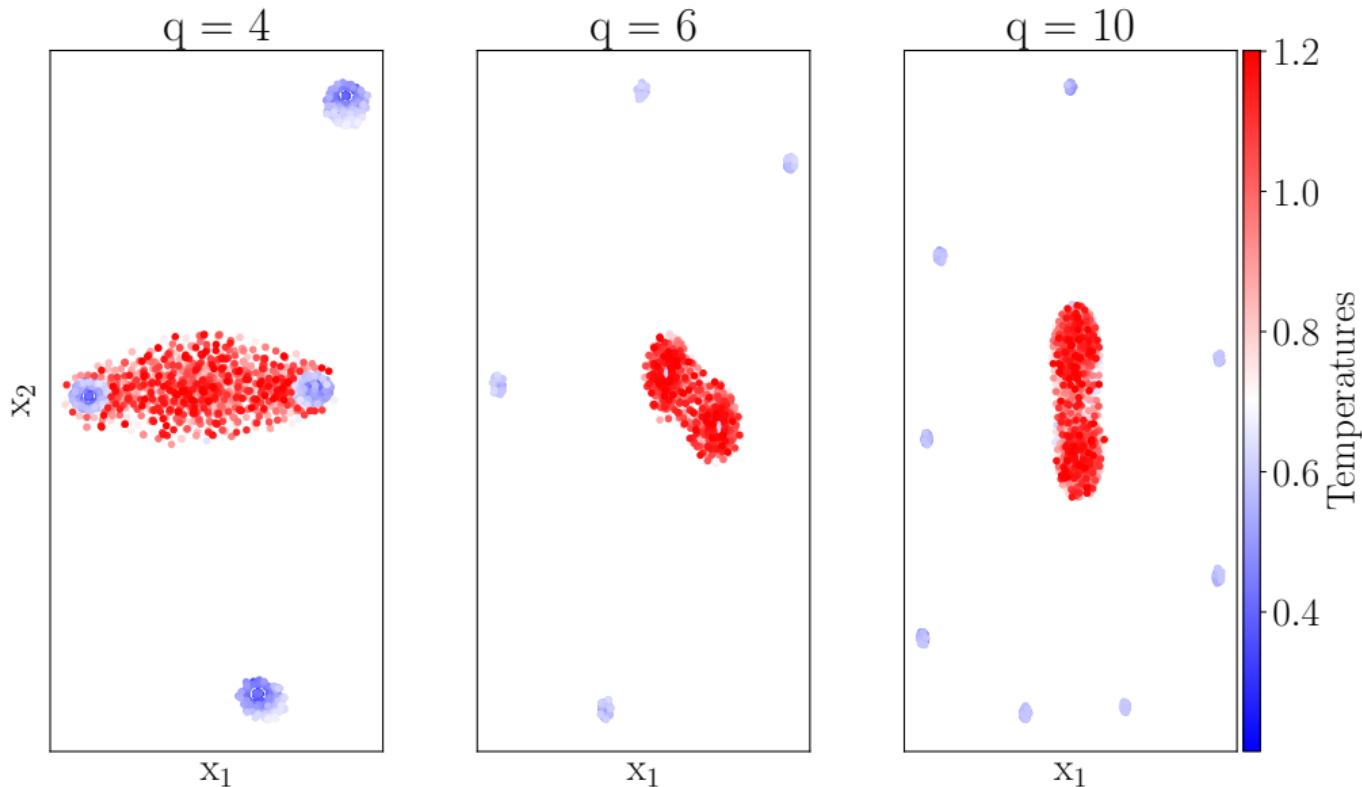
Ising Model - Classification



Ising Model - PCA



Ising Model - t-SNE+PCA



Ising Model - t-SNE

