

Lecture 1: Basics of Optimization

- Gradient descent
- Constrained Optimization
- Probabilistic Formulation
- Differentiability & Convexity

Lecture 2: Function Spaces

- Vectors and vector spaces
- Basis & Change of Basis
- Linear transformations
- L^p norms, convolution, Fourier transform

Lecture 3: Linear Algebra

- Matrix Algebra
- Eigenvalues & Eigenvectors
- Spectral Thm
- SVD