



ML for Genomics



Lecture 1: Biological Background



Lecture 2: Gene Variation and Predicting TF Binding Sites



Lecture 3: Predicting TF Binding Sites & Chromatin Accessibility



Lecture 4: Predicting Chromatin Accessibility



Lecture 5: Chromatin and Protein Folding



Lecture 6: Cell-Type Deconvolution



Lecture 7: Intro to Single Cell Transcriptomics and Dropout Imputation



Lecture 8: Batch correction, clustering, differential gene expression and cell type annotation in scRNA-seq



Lecture 9: Trajectory Analysis from scRNA-seq



Lecture 10: Spatial Omics



Lecture 11: Integration of Different Single Cell Data Types

After Lecture Papers

Week 1: Base-resolution models of transcription-factor binding reveal soft motif syntax

Week 3: Deep learning sequence-based ab initio prediction of variant effects on expression and disease risk

Week 5: Benchmarking of cell type deconvolution pipelines for transcriptomics data

Week 7: SAVER: Gene expression recovery for single-cell RNA sequencing