

Exam 3 Focus Areas

BIOE 210, Spring 2020

- Singular Value Decomposition
 - Existence of SVD
 - Properties of \mathbf{U} , $\mathbf{\Sigma}$, and \mathbf{V}
 - Relationship to eigenvalues/eigenvectors
 - Image compression using low-rank approximations
- Principal Components Analysis
 - Properties of principal components
 - Relationship to SVD
 - Interpreting PC plots
 - Interpreting loadings
 - Explained variance
- Linear models
 - Errors and parameters
 - Least-squares minimization
 - Matrix formalism for linear models
 - Pseudoinversion
- Applied linear regression
 - Coefficients and significance
 - RMS error of model predictions
 - Interactions
- Logistic regression
 - Probabilities, odds, and odds ratios
 - The logistic link function
 - Interpreting coefficients