Supporting readings:

assumptions of a linear model: http://people.duke.edu/~rnau/testing.htm

covariance matrix of $\boldsymbol{Z}$: https://www.itl.nist.gov/div898/handbook/pmc/section5/pmc541.htm

eigendecomposition of $\boldsymbol{Z}^T\boldsymbol{Z}$: downloaded

proportion of variance explained: https://stats.stackexchange.com/questions/22569/pca-and-proportion-of-variance-explained

scree plot: http://ba-finance-2013.blogspot.com/2012/09/scree-plots-interpretation-and.html

Penn state Stat Course open: https://online.stat.psu.edu/stat508/

A semi-academic walkthrough of building blocks to the PCA algorithm and the algorithm itself: downloaded

Charismatic stackoverflow: https://stats.stackexchange.com/questions/2691/making-sense-of-principal-component-analysis-eigenvectors-eigenvalues

A CrossValidated question and answer discussing whether there are parametric assumptions to PCA: https://stats.stackexchange.com/questions/200410/is-principal-component-analysis-a-parametric-method

Coding Resources

- Python Documentation for PCA within the sklearn library. (This link includes examples!)

  https://scikit-learn.org/stable/modules/generated/sklearn.decomposition.PCA.html

- PCA Explanation on AnalyticsVidhya. (This link includes Python and R.)

  https://www.analyticsvidhya.com/blog/2016/03/pca-practical-guide-principal-component-analysis-python/

- Implementing PCA in Python with a few cool plots.

  http://sebastianraschka.com/Articles/2015_pca_in_3_steps.html

- Comparison of methods for implementing PCA in R:

  http://www.sthda.com/english/articles/31-principal-component-methods-in-r-practical-guide/118-principal-component-analysis-in-r-prcomp-vs-princomp/

Academic Textbooks and Articles

- An Introduction to Statistical Learning, 6th printing, by James, Witten, Hastie, and Tibshirani. (PCA is covered extensively in chapters 6.3, 6.7, and 10.2. This book assumes knowledge of linear regression but is pretty accessible, all things considered.)

http://faculty.marshall.usc.edu/gareth-james/

- Notes from Penn State's STAT 505 (Applied Multivariate Statistical Analysis) Course. (I've found Penn State's online statistics course notes to be incredible, and the PCA section here is particularly helpful.)

  https://online.stat.psu.edu/stat505/

- A Tutorial on Principal Components Analysis, by Jonathon Shlens at Google Research.

  https://arxiv.org/pdf/1404.1100.pdf

- A draft chapter on Principal Component Analysis from Cosma Shalizi of Carnegie Mellon University.

  http://www.stat.cmu.edu/~cshalizi/ADAfaEPoV/

- A chapter on data preprocessing from Applied Predictive Modeling includes an introductory discussion of principal component analysis (with visuals!) in Section 3.3. (h/t to Jay Lucas for the recommendation!)

  http://appliedpredictivemodeling.com/

- Elements of Statistical Learning, 10th printing, by Hastie, Tibshirani, and Friedman. (PCA is covered extensively in chapters 3.5, 14.5, and 18.6. This book assumes knowledge of linear regression, matrix algebra, and calculus and is significantly more technical than *An Introduction to Statistical Learning*, but the two follow a similar structure given the common authors.)

  https://web.stanford.edu/~hastie/ElemStatLearn//printings/ESLII_print10.pdf

Tangential Resources

- Essence of Linear Algebra YouTube Series (Including one video on Eigenvectors and Eigenvalues that is especially relevant to PCA; h/t to Tim Book for making me aware of this incredible resource.)

  https://www.youtube.com/watch?v=PFDu9oVAE-g&index=14&list=PLZHQObOWTQDPD3MizzM2xVFitgF8hE_ab&t=584s