AML NOTES COMBINED  
WEEK 1

* Machine learning
* Limitations
* Why use ML
* Supervised learning – Labeled data   
  -Classification  
  -Regressions
* Semi-Supervised learning – Mix of both kinds of data. Speech recognition.
* Unsupervised learning – Unlabeled data
* Reinforcement learning – Learns by failing. Trial and error. Self-driving cars
* Supervised + Reinforcement – ChatGPT
* Complete Assignment 1 – Deadline 9/9

WEEK 2

* Descriptive – describes trends and relationships
* Bias-variance tradeoff
* Predictive
* Diagnostics – finding the problem
* Prescriptive – solution
* Data types – cross sectional, time series, panel
* Statical proposals and methods of data explorations (EDA)
* Missing at Random (MAR) – imputations and predictions
* MNAR (Missing not at Random) – Get more data
* Collinearity- Flipped sign, not significant - variance inflation factor (VIF) is a measure of the amount of multicollinearity in regression analysis
* Survivor bias
* Record data – tabular
* Non record - websites
* Attributes – Nominal, ordinal
* Noise, Outliers,
* Data Transformation – Aggregation, Discretization, Log Transformation, Z-score transformation, Min-max transformation

WEEK 3 – Read on Dimensionality Reduction, Do all exercises

* Data visualization
* Eigenvalues and eigenvectors
* Singular value decomposition
* Saclers and vectors – readd
* Low-rank approximation
* PCA
* Manifold learning