Graph Machine Learning Midterm Study Guide 1/11/2023

- Graph Learning Fundamentals
    a. Non-IID, non-Euclidean data
    b. Relational/structural learning + feature learning
- Link Analysis
    a. Page Rank, personalized PageRank, and variants.
    b. Random walk, markov property in graphs
- Relational classification for predicting node labels
    a. Collective classification, correlation in network
    b. Semi-supervised learning
    c. Probabilistic relational classification
    d. Iterative node classification
- Machine learning, neural networks, and convolution networks fundamentals
    a. Representation learning, curse of dimensionality
    b. Basics of stochastic gradient descent and optimizing a loss function
    c. Convolution operation
- Graph Neural Network
    a. Expressiveness for generating high quality node embeddings: node, edge, and graph.
    b. Permutation invariance, permutation equivariance.
    c. Message passing, aggregation, and update operations.
    d. Basic models GNN models.