1163-52-52   **Jeff M. Phillips***, 50 S. Central Campus Dr., Salt Lake City, UT 84108. *A Primer on the Geometry in Machine Learning.*

Machine Learning is a discipline filled with many simple geometric algorithms, the central task of which is usually classification. These varied approaches all take as input a set of n points in d dimensions, each with a label. In learning, the goal is to use this input data to build a function which predicts a label accurately on new data drawn from the same unknown distribution as the input data. The main difference in the many algorithms is largely a result of the chosen class of functions considered. This talk will take a quick tour through many approaches from simple to complex and modern, and show the geometry inherent at each step. Pit stops will include connections to geometric data structures, duality, random projections, range spaces, and coresets. (Received August 01, 2020)