Persuasion with Limited Data: A Case-Based Approach (Sarah Auster with Shiri Alon, Gabi Gayer and Stefania Minardi)

Abstract: A strategic sender collects data with the goal of persuading a receiver to adopt a new action. The receiver assesses the profitability of adopting the action by following a classical statistics approach: she forms an estimate via the similarity-weighted empirical frequencies of outcomes in past cases, sharing some attributes with the problem at hand. The sender has control over the characteristics of the sampled cases and discloses the outcomes of his study truthfully. We characterize the sender's optimal sampling strategy as the outcome of a greedy algorithm. The sender provides more relevant data---consisting of observations sharing relatively more characteristics with the current problem---when the sampling capacity is low, when a large amount of initial public data is available, and when the estimated benefit of adoption according to this public data is low. Competition between senders curbs incentives for biasing the receiver's estimate and leads to more balanced datasets.