

**Cohn, D. A.; Ghahramani, Z.; Jordan, M. I.**

**Active learning with statistical models.** (English) Zbl 0900.68366

*J. Artif. Intell. Res. (JAIR)* 4, 129-145 (1996).

Summary: For many types of machine learning algorithms, one can compute the statistically ‘optimal’ way to select training data. In this paper, we review how optimal data selection techniques have been used with feedforward neural networks. We then show how the same principles may be used to select data for two alternative, statistically-based learning architectures: mixtures of Gaussians and locally weighted regression. While the techniques for neural networks are computationally expensive and approximate, the techniques for mixtures of Gaussians and locally weighted regression are both efficient and accurate. Empirically, we observe that the optimality criterion sharply decreases the number of training examples the learner needs in order to achieve good performance.

**MSC:**

[68T05](#) Learning and adaptive systems in artificial intelligence

[68W10](#) Parallel algorithms in computer science

Cited in **57** Documents

**Full Text:** [Link](#)