



Experiment Design for Computer Scientists

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Sources

- ◆ Paul Cohen, *Empirical Methods in Artificial Intelligence*, MIT Press, 1995.
- ◆ Tom Dietterich, CS 591 class slides, Oregon State University.
- ◆ Rob Holte, “Experimental Methodology,” presented at the *ICML 2003 Minitutorial on Research, Writing, and Reviews*.



Experiment design

- ◆ Experiment design criteria:
 - ▶ **Claims** should be **provable**
 - ▶ Contributing **factors** should be isolated and **controlled** for
 - ▶ Evaluation **criteria** should be **measurable** and **meaningful**
 - ▶ **Data** should be gathered on **convincing** domains/problems
 - ▶ **Baselines** should be **reasonable**
 - ▶ **Results** should be shown to be **statistically valid**