Principles of Prediction and Inference

Instructors

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Course Objectives

- The purpose of this short course is to
  - familiarize practitioners with essential principles for prediction and inference tasks using machine learners,
  - explain the reliance on well-defined operating characteristics, particularly out-of-sample optimism and coverage,
  - demonstrate how to compare and contrast the operating characteristics of machine learning and statistical models,
  - promote the habit of using two aligned models, a prediction and inferential model, to meet specific scientific needs.

Outline

- Introductions

- 2:10-3 (Matt) Supervise Learning Concepts
- 3:10-4 (Jeffrey) Variable Selection and Inference
- 4:10-5 (Tom) Operating characteristics

- 5:10-5:30 (all) Breakout rooms with some examples