SWARM Lab
UC BERKELEY

ROBOT LEARNING

PIETER ABBEEL

Swarm Visions
December 6, 2011
AUTONOMOUS EXECUTION

World Changes

Perceive \rightarrow Act

Pixels, Inertial Sensor, ...

Motor commands
APPRENTICESHIP LEARNING

Demonstrations of Task

Representation of Task Amenable to Computer Execution

Autonomous Execution
AUTONOMOUS HELICOPTER AEROBATICS
EXAMPLE: LEARNING PERCEPTUAL CAPABILITIES

Inside-Out = True

TOE
ANKLE
UP
EXAMPLE: LEARNING PERCEPTUAL CAPABILITIES

Five previously unseen socks are placed on the table.
EXAMPLE: LEARNING PERCEPTUAL CAPABILITIES
CURRENT DIRECTIONS

- Benefits of scale for learning
- Self-learning --- safely
- Sensory capabilities