CS599 Projects

• Learning Foot Placement with Little Dog
  • Logistic regression
    – Independent, big model, local models
    – Product of experts (two experts)
    – SVM

• Motor Primitives
  • Learning gaits (from demonstrated data)
  • Optimize gaits with RL
  • New behaviors, e.g., climb on rock
CS599 Projects

• Learning Model-Based Control
  • Compare learning approaches and their accuracy by off-line learning and on-line evaluation
    – GP
    – Linear regression
    – LWPR
    – GP with fake data points

• Learning from Demonstration
  • Bagnell et al.: maximum margin methods
  • Rao et al.: LVGP
CS599 Projects

- Learning Foot Placement Planner
  - Kuffner et al.
  - DP/A* etc. approaches
- Memory Based Learning of Foot Placements
  - Store data and create fast lookup methods
- Reinforcement Learning with Policy Gradients
  - E.g., optimize motor primitives
  - E.g., optimize gait pattern
  - E.g., comparisons on simulated toy problems
  - Kimura, Stone, Peters, Ng