

# **CS394R**

# **Reinforcement Learning: Theory and Practice**

**Peter Stone**

Department of Computer Science  
The University of Texas at Austin

# Good Morning Colleagues

---

- Are there any questions?

# Logistics

---

- First 3 assignments due

# Logistics

---

- First 3 assignments due
- Think about final project - 2 weeks

# Logistics

---

- First 3 assignments due
- Think about final project - 2 weeks
- Next 3 weeks tentatively planned (including one week when I'm away)

# Logistics

---

- First 3 assignments due
- Think about final project - 2 weeks
- Next 3 weeks tentatively planned (including one week when I'm away)
  - Skipping last chapters (skim them)

# Logistics

---

- First 3 assignments due
- Think about final project - 2 weeks
- Next 3 weeks tentatively planned (including one week when I'm away)
  - Skipping last chapters (skim them)
  - Phase shift in what to expect

# Logistics

---

- First 3 assignments due
- Think about final project - 2 weeks
- Next 3 weeks tentatively planned (including one week when I'm away)
  - Skipping last chapters (skim them)
  - Phase shift in what to expect
  - Next week: model-based learning

# Logistics

---

- First 3 assignments due
- Think about final project - 2 weeks
- Next 3 weeks tentatively planned (including one week when I'm away)
  - Skipping last chapters (skim them)
  - Phase shift in what to expect
  - Next week: model-based learning
- Robotics talk tomorrow at 11: “Robot Teams to Assist Humans in Scientific Discovery”

# The Week 1 Task?

---

# The Week 1 Task?

---

- Continuous state, noisy actions

# The Week 1 Task?

---

- Continuous state, noisy actions
- What's needed to do the normal thing?

# The Week 1 Task?

---

- Continuous state, noisy actions
- What's needed to do the normal thing?
- How can we get it?

# The Week 1 Task?

---

- Continuous state, noisy actions
- What's needed to do the normal thing?
- How can we get it?
- Keepaway example

# Classical Planners

---

- State-space
- Plan-space

# Discussion Points

---

- What's the difference between exploration bonus options (p. 238)

# Discussion Points

---

- What's the difference between exploration bonus options (p. 238)
- Is it easier to generalize a policy or a model?