

# **CS395T: Autonomous Robots**

## **Fall 2005**

**Peter Stone**

Department of Computer Sciences  
The University of Texas at Austin

# Allow me to introduce:

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DRUM ROLL.....



*Department of Computer Sciences*

*The University of Texas at Austin*

Peter Stone

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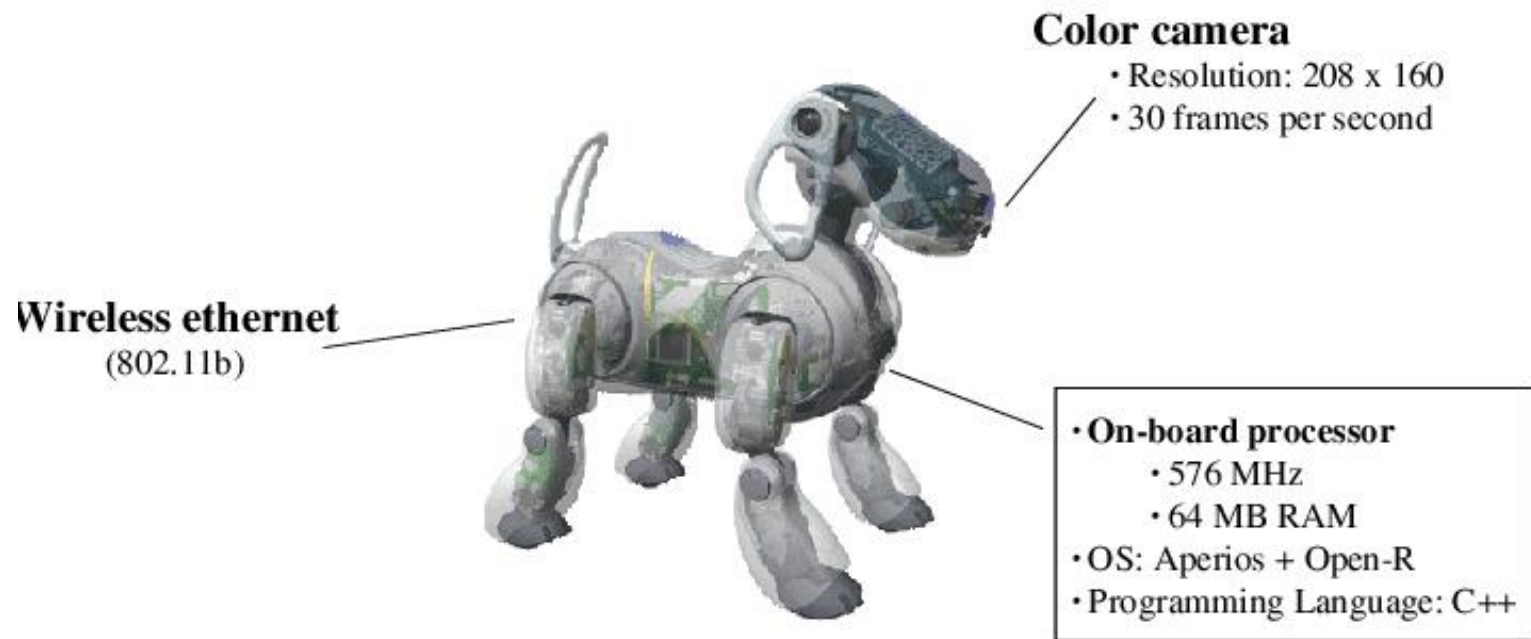
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DRUM ROLL.....

# Allow me to introduce:

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DRUM ROLL..... **AIBO!**



# This Course

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- Start with **out-of-the-box** Aibo robots

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- Learn how to create a **team** of soccer robots



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- Learn how to create a **team** of soccer robots
- Build on our **existing team code**

# My Goals

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**Win RoboCup!**

# Today

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- An introduction to RoboCup
- An introduction to Aibos
- An introduction to the class
- Initial assignments
- Lab tour

# Autonomous Intelligent Agents

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- They must **sense** their environment.
- They must **decide** what action to take (“think”).
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- Improve performance from experience (Learning agents)

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Autonomous Bidding, Cognitive Systems,  
Traffic management, **Robot Soccer**

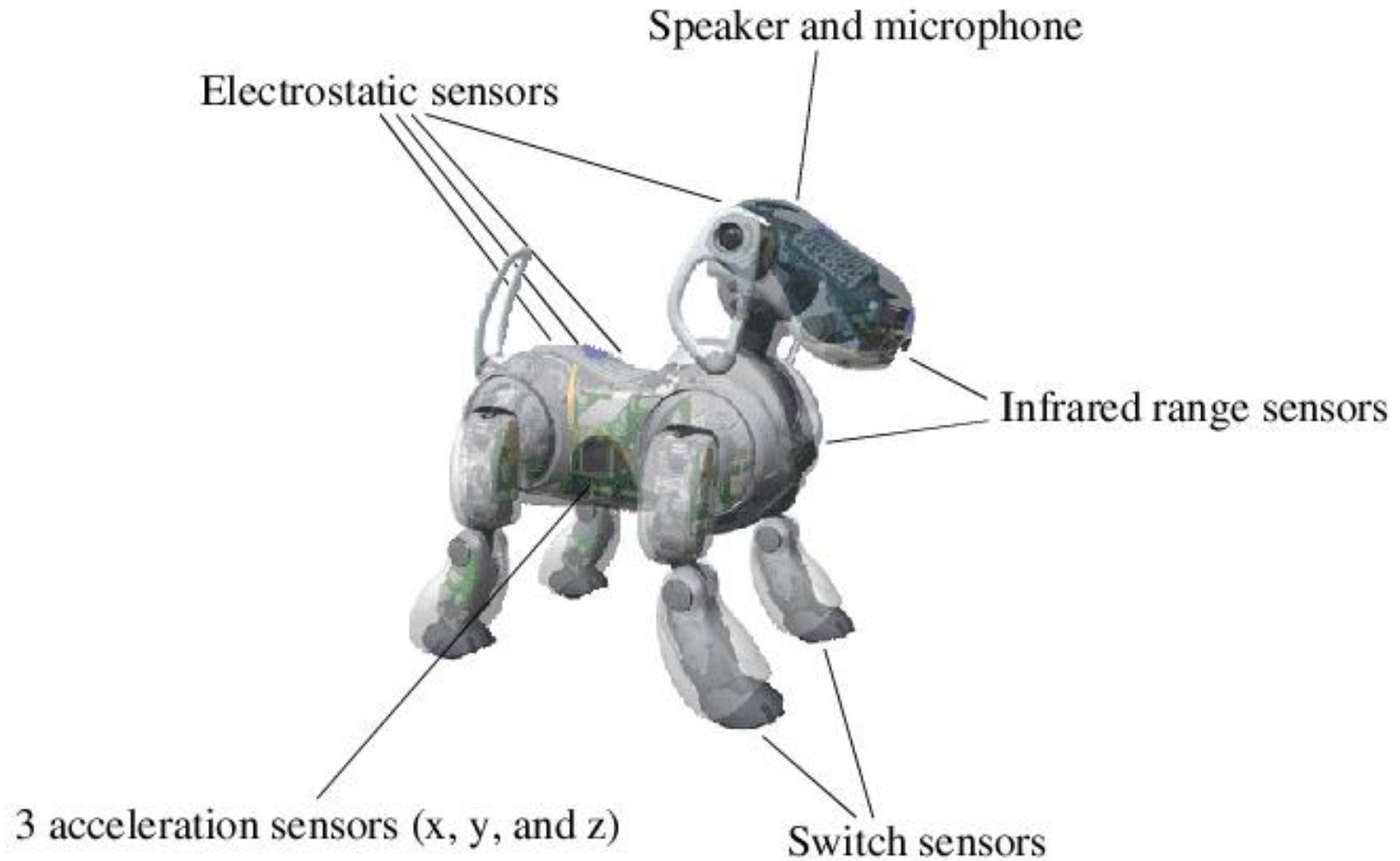
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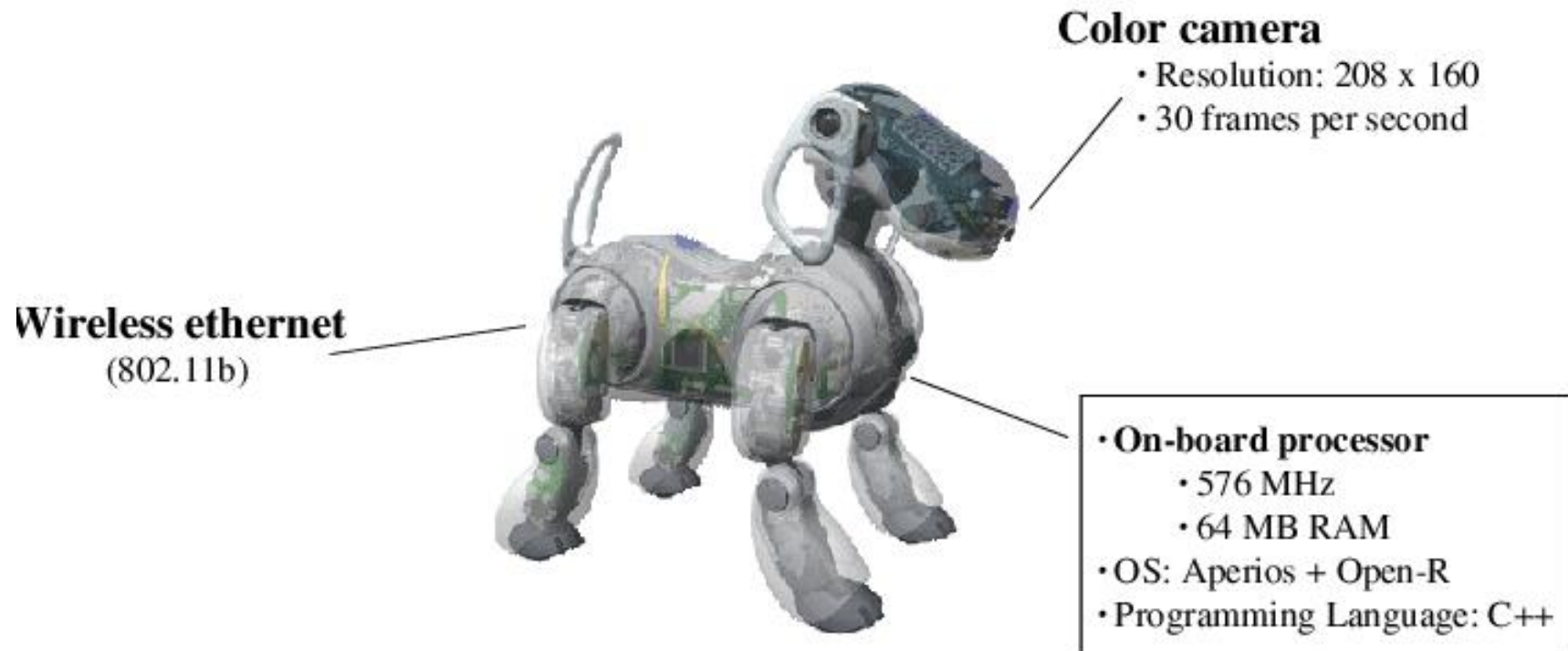
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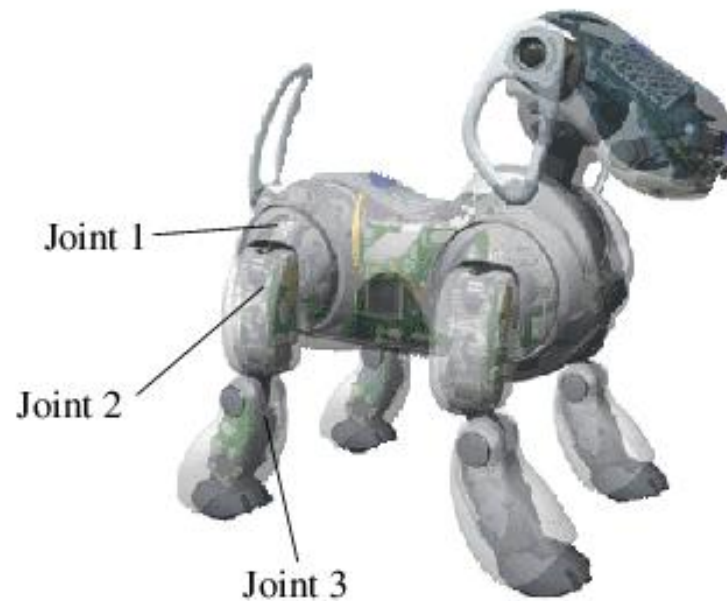
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# Sony Aibo ERS-7 Specs

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20 degrees of freedom



- head: 3 neck, 2 ears, 1 mouth
- 4 legs: 3 joints each
- tail: 2 DOF

# Warnings!

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- They are **delicate**
- They are **expensive**

# Creating a team — Subtasks

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- Ball manipulation (kicking)
- Vision
- Localization
- Individual decision making
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  - A nice clear
  - A counterattack goal
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Now...

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Now... take a breath

# The Flip Side

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  - Debugging can be very **tedious**
- Largest grade predictor: probably **hours** spent in lab

# The Flip Side (cont.)

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- Class will be loosely structured
  - Some lectures/discussions
  - Often **show and tell** in the lab

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  - Class will require **maturity, self-motivation**
- Bottom line: if you're worried about time management or grades, especially in other classes, the class is probably not for you.

# Logistics

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- Decide quickly if you're up for the course
  - Indicate status on **roster**
  - I need to decide who can register
  - We need to make computer accounts

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  - I need to decide who can register
  - We need to make computer accounts
- Be on the mailing list

# Grading and First Assignments

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- See syllabus

# The Lab

---

- TAY 2.144, 471-9787
- Currently 9 computers
  - How many people don't have laptops with wireless access?



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- My research group is **sharing** the lab with you
  - Feel free to get to know them, ask questions
  - Especially Dan and Mohan

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- Keep it neat
- Let me know ASAP if there are logistical problems

# Next Meeting

---

- Tuesday at 2pm
- Here unless email to class list



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**Now, down to the lab**