CS 309: Autonomous Intelligent Robotics
FRI I

Lecture 22:
Final Project Workshop

Instructor: Justin Hart

http://justinhart.net/teaching/2019_spring_cs309/

Final Project Proposals

- 1.5 pages
- IEEE / bare_conf.tex

Sections

- Introduction
  - What's the problem you're interested in
- Background (optional for now)
  - What approaches have been taken? By whom? Use citations (in Bibtex)
- Approach
  - How do you plan to solve it?
- Conclusion
  - Briefly restate problem and approach, why you think it will work, and what you think you will have accomplished.

DO NOT

- Write filler.

- Make direct quotes. In general, they are not useful.

- Include large, pointless figures to fill space

- Make statements that you cannot prove

DO

- Make brief, tight, sound statements.

- Bend this rule if they actually are useful (which is almost never)

- Include figures that help illustrate your ideas

- Use citations for sound arguments others have made, or proof and arguments for ideas you have yet to demonstrate

DO NOT	DO
• Pick a project you have no ability to carry out	• Pick a challenging, but doable project
• Pick a project that is trivial and uninteresting once carried out	• Pick a project that you would be interested in if someone else was explaining what they did to do
• Write in a manor that says, "I need enough text."	• Write in a way that makes your point, and makes me and others excited about your work

Past strong projects

- Is the lab empty?
  - A robot drove into the 3rd floor lab, counted people using YOLO, and then compared this against the number of computer workstations to see if there were spots available.

- GDC events integration
  - Integrated with the events calendar, so users could interface to the robot to find out what is going on in the department. Included touch-screen and speech interfaces, plus location guidance.

Past strong projects

- Speaker identification in crowded rooms
  - Multiple people speaking. Which is speaking to the robot? Where is this person?

- Object location mapping
  - Robot drives, identifies objects, and then later is asked to return to the object. Store the object location so you can find it later.

Past strong projects

- Object delivery
  - Person wants item in location X, bring it to them
    - This is something that needs just a little more to it, in general, and the arms are all in use.
- Person following
  - Person following is a perennial problem. This is only interesting if you can follow the person when they turn a corner out of view of the robot, or when another person crosses their path

Past strong projects

- Robot says hello
  - Get people to talk to the robot and find out what they ask for.
  - Ideally, this helps us to identify future desirable functionality for this robot.
  - This only works well if you get the software working quickly and get a LOT of RAW data.
    - Don't tell me, "Entertainment, delivery.."
    - Do tell me, "Pick up my pizza. Check my mail. Buy me a coffee."