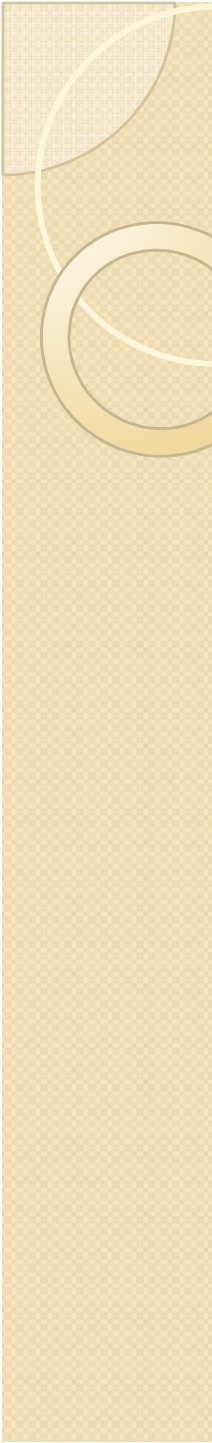


CS 6780: Advanced Machine Learning

Fall 2009.

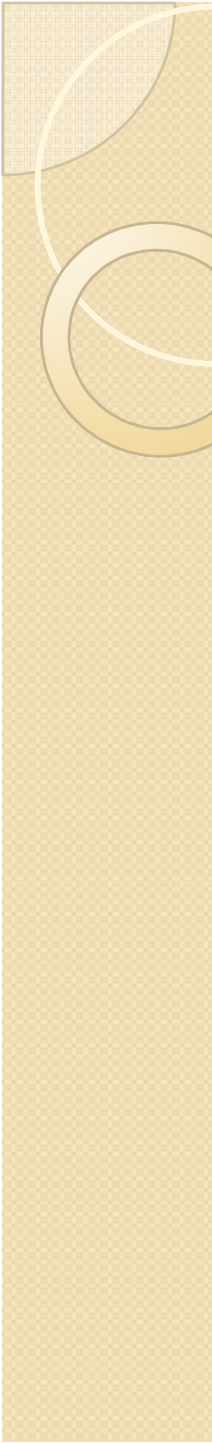
Ashutosh Saxena



Office Hours

Thursdays. 2pm to 3pm. 4159 Upson.

Starting Sep 10 next week.



Homework: Tentative schedule.

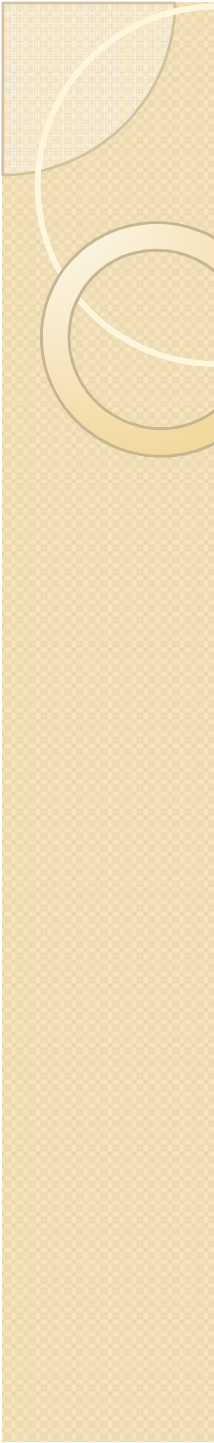
Homework 1. Supervised Learning.
Released Sep 9, and due Sep 22.

Homework 2. Unsupervised Learning.
Due ~Oct 8.

Mid-term exam in Oct 20 (tentative).

Homework 3. Prob. Graphical Models.
Due ~Oct 27.

Homework 4. All + advanced topics.
Due ~Nov 26.



Project

- Team of maximum two people.
- Abstract, mid-term report and final report.

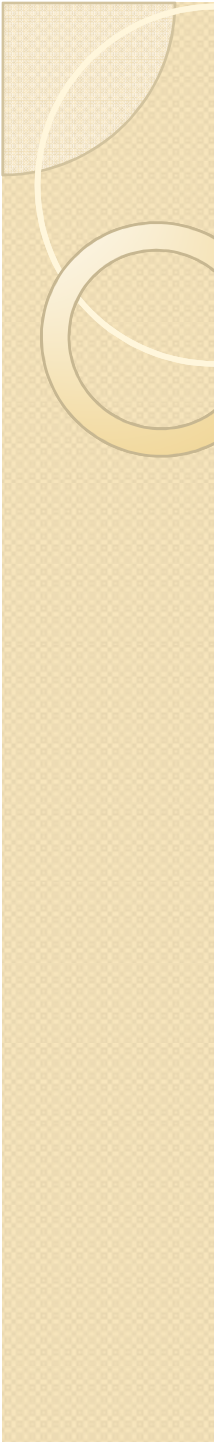
Joint projects:

- Combining the project with one's own graduate-level research. This is fine.

However the fact must be stated in all the project reports.

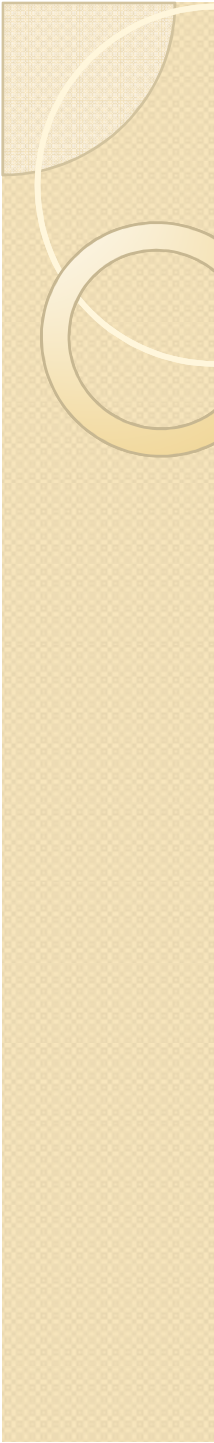
- Combining the project with other course credits (or other research credits). This is fine.

However, clearly state in the reports what parts of the project are done for CS 6780.



Projects

One page abstract. Due Sep 20.
(No late days.)



Projects: Suggested Format

Goal: 1-2 lines.

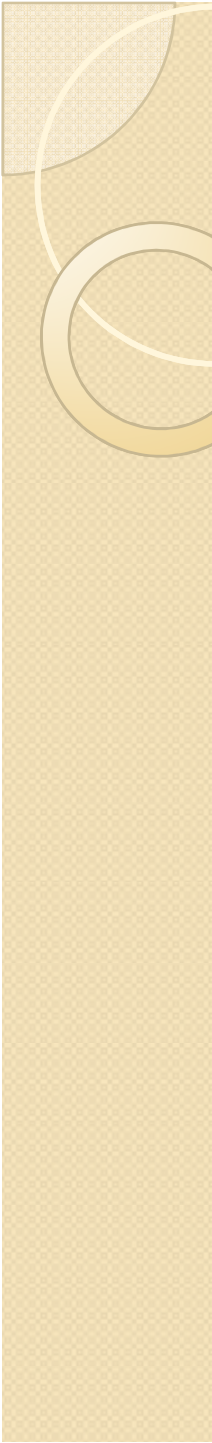
Precisely state the goal of the project.

Description: 1-2 paragraphs.

Overview of problem. Novelty. Methods.

Plan/Testing: 1 paragraph.

Plan and timeline. Test data or test scenario.



Project Ideas.

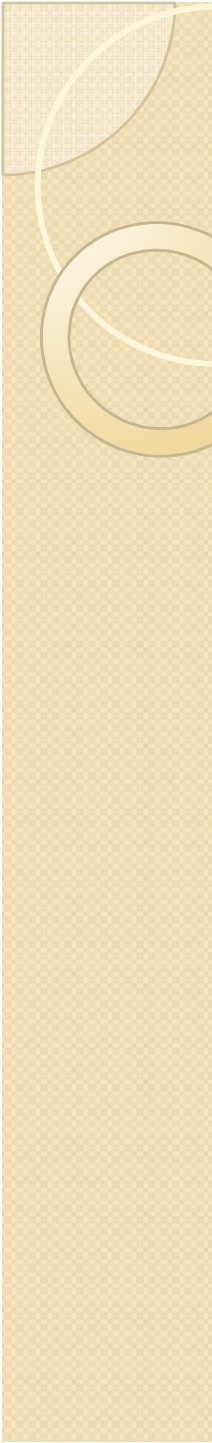
Choose your own!

I. Learning from Nature.



2. RC Car Drift.





3. Videoscapes

An immersive tour through community video collections.

4. Automatic Video Montage

- Learning to edit movies automatically.

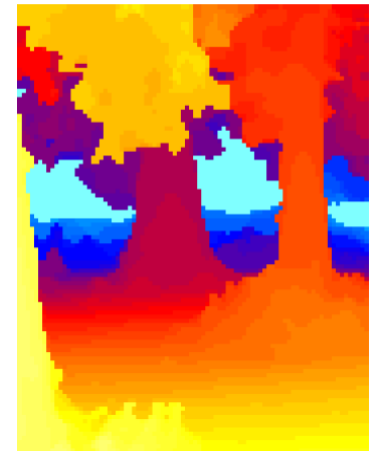


5. Make 3D from Video



Video

Learn
mapping



3D Video

Aerial Robots

- Fly in cluttered environments, such as offices and corridors.
- Unknown environments, obstacle avoidance.
- Hard Control.

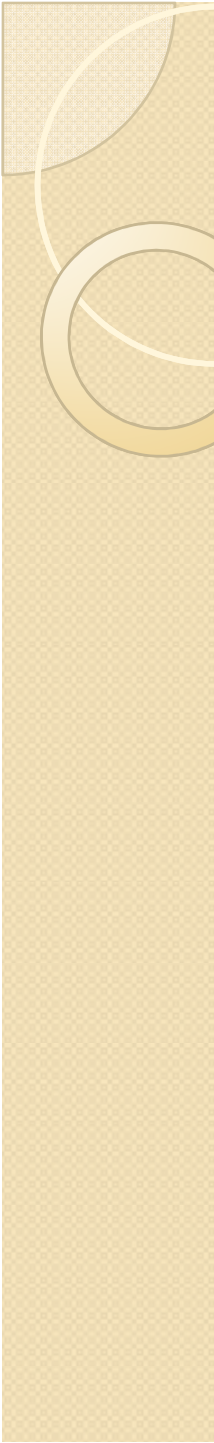


Aerial Robots

Several projects:

- Reinforcement Learning and Control.
- Sensor data estimation.
- Perception: Learning from images, etc.





Social Videos

Social Networks (e.g., Facebook).

- People are similar.
- Friends are more interesting than other people..... (most of the times).

Online Video Collections (e.g., YouTube).

- Discovery of videos using social network.
- Summarization using social network.