CS 670: Projects
Project parameters

• A project should require the effort of 2-3 homeworks.
• You are free to be more ambitious if you want, but don’t bite off more than you can chew!
• These are not “team projects”. They are individual projects.
  – However, if you want to propose two projects that go together to produce a system, you can propose such a project.
  – Joint projects should have clear goals for each person.
  – If one person fails to turn in their part, the project should be structured so that the other person’s part can still be evaluated.
Project Selection

• Either
  – Select one of the pre-defined projects presented today.
  – Make up your own project
    • If you make up your own, you need to write-up a project plan, and get it approved by Prof. L-M.
    • You should turn in a project plan by Nov. 4th. I will get these back to you by Nov. 11th.
Due date

• Due Dec. 2\textsuperscript{nd}.

• Main requirement:
  – Code (or structure) that works.
  – Write-up that explains what you did and why (1-5 pages).
  – Presentation? Very short, highlights most interesting points.

• Trying to work out presentations (i will be in Australia).
Projects
Face verification algorithms

• Implement recent face verification algorithm:

• Two suggestions:
  – PEP model (http://personal.stevens.edu/~hli18/papers/PEMCVPR2013_CameraReady.pdf)
Feature Selection

• Redo feature selection assignment using ideas of sub-modular functions (talk to me about this if you want to do it)

• http://submodularity.org/submodularity-slides.pdf
Font-free OCR

• Check out this paper:
Distribution Fields

1. Implement distribution fields for tracking
2. Implement basin-of-attraction studies for new distribution field method (talk to me)
Image stabilization

• Implement image stabilization algorithm
SIFT from scratch

- Implement all aspects of the SIFT descriptor from scratch (no libraries).
Bilateral Regression

• Compare Gaussian mixture models and bilateral regression for image segmentation. B. R. is Like GMMs for segmentation, but with regression instead.
Conditional Random Field for Segmentation
Build an Ames Room

• Life size
• Should be dis-assemble-able 😊, so i can use it in the future.
Digital pinhole camera

• Build a pinhole camera with digital camera inside.
  – Can take “infinite depth of field” pictures.