On the first meeting, we talked about possible topics for my senior project:

* Dance project (building on the [Bird’s Eye](http://drablab.org/birdseye-projects.shtml) project), possibly utilizing the Kinect to project images on the dancer.

What I did this week:

I read the paper on homography in camera-projector systems, which describes the technique used to create automatic keystone correction and laser pointer presentation control.[[1]](#footnote-1) The main part of the procedure is determining the homography matrix that maps points on the projector frame to pixels in the camera frame. This homography is then used to pre-warp the projected images so that they appear “straight” on the screen/wall.

? How does the software developed in this paper deal with animations (e.g. PowerPoint, or Prezi), and online presentations?

? Is it assumed that the projector is level on table?

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I also re-read Wui Ming Aldrich-Gan’s and Adina R. Stoica’s senior projects. Ming’s project unfortunately does not have a “Future Works” section...

? What are the possible directions to go from his project?

Next week’s TODO:

* Make a web-page for the senior project
* Decide on the topic
* Talk to a math professor

Qs to Keith:

* How to get started with creating a website?
* Math supervisor: Jim or Mary?
* Software for bibliography (citations)
* What is OpenCV used for? What is it designed for and how could I use it in my project?

Ch. 10, 13 txtbook – find interesting graphics problems

Ch. 4

Augmented reality?+ mobile

Virtual desk: camera and projector ^, real notes and virtual notes “combined”

Possible topics?

Activity detection in video

<http://www.cs.sfu.ca/~mori/research/papers/bayazit_mva09.pdf>

what kind of activity? Dance?

virtual keyboard?

Projecting the laptop screen and allowing user to click on things on the projected image.

<https://www.youtube.com/watch?v=M0ODskdEPnQ>

book:

hologram

mobile scanner (a bit similar to panorama)

1. R. Sukthankar, et al., *Smarter Presentations: Exploiting Homography in Camera-Projector Systems*, Proceedings of International Conference on Computer Vision, 2001 [↑](#footnote-ref-1)