

# ECS 193AB Winter/Spring2017

## Capture My Meeting

Link to Presentation Slides: [https://prezi.com/nduvtfmzqv5k/capture-me/?utm\\_campaign=share&utm\\_medium=copy](https://prezi.com/nduvtfmzqv5k/capture-me/?utm_campaign=share&utm_medium=copy).  
([https://prezi.com/nduvtfmzqv5k/capture-me/?utm\\_campaign=share&utm\\_medium=copy](https://prezi.com/nduvtfmzqv5k/capture-me/?utm_campaign=share&utm_medium=copy).)

**Keywords:** Computer vision, machine learning

### **Background/Introduction/Business Value:**

The whiteboard is still the dominant tool for sketching ideas. With increased number of distributed teams the ability to collaborate real time with physical whiteboards is imperative. Web meetings have taken the first step but they still do not capture the sketches on the whiteboard. The digital whiteboard was too expensive and clumsy. The Microsoft Surface hubs costs \$20K plus installation and will need to be replaced every 3-5 years.

Leveraging existing conference room equipment(whiteboard, projectors, laptops or phones) and web meeting software (gotomeeting.com, join.me, Skype, etc with computer vision technology this solution will provide real time collaboration today's teams desperately need.

### **Description/Design Issues/Project scope:**

#### **Solution:**

An application running on mobile devices, tablets, and or laptops that captures whiteboard content as it is being generated. The solution will use the latest computer vision algorithms to remove the presenter, merge multiple presenters content, and stream it to other meeting participants through a cloud service.

#### **User Story:**

Bob and his team are in a conference room in San Francisco sketching ideas on a white board. Linda and her team are in a conference room in London. Steve is working from home in Truckee. Linda and Bob want to be able to brainstorm ideas for their next software project together with their whiteboards. Steve wants to watch what they are working on. So they turn on the solution to connect all 3 locations. The solution captures content from Bob's whiteboard using a camera and projects it onto Linda's whiteboard through her projector. Linda's whiteboard content is captured by her camera and presented on Bob's whiteboard via his projector. Steve sees Bob and Linda's content on his computer screen. There entire session is recorded, indexed, and stored in the cloud for so it can be searched and accessed after the meeting.

#### **Deliverables:**

1. 1) Design documents, including Identify a Computer Vision algorithm for capturing whiteboard content and removing presenter that can be used in a commercial project.
2. 2) Proof-of-concept that delivers:
  1. a) Whiteboard content capture
  2. b) Whiteboard content presented
  3. c) Record content from multiple sources into a single recording
- 3) Optional Deliverables based on size of team
  - a) Integrate with a web conferencing service

#### **Critical issues:**

Finding a CV algorithm that will capture the whiteboard content clearly and remove the presenter in real time so the whiteboard content can be streamed. Students will need to analyze running the CV algorithm for processing on the capture device(phone, tablet, laptop) or as a cloud service.

If the solution can be delivered as a cloud service hosted in Amazon or Google that would be the best solution. Otherwise a combination of client app for capture and present connected to a cloud service.

#### **Contact:**

The sponsors will meet with the students virtually 1-2X per week and once a month at the UC Davis Campus.

#### **Sponsors:**

Eric Law [ericlaw@gmail.com](mailto:ericlaw@gmail.com) 415-264-3845  
Prof. Yong Jae Lee (Computer Science department) [yjlee@cs.ucdavis.edu](mailto:yjlee@cs.ucdavis.edu)