

Problem Statement

The goal of this project is to create a system that captures all of the information written on a board during a class in a readily accessible manner. The two driving forces behind solving this problem are: autonomous collection of notes for students with disabilities and providing a means for professors to compare their notes with the actual information presented during a lecture.

Current practices at Bucknell rely on the aid of a student volunteer to provide photocopies of his or her notes to students who are incapable of taking notes themselves during the class. This is not an optimal solution because: the student volunteer must be in class every day, turnaround time for the notes is too long, and the quality of the student volunteer notes cannot be guaranteed. In addition, several professors use different colored writing to represent different forms of information. If the student volunteer did not copy the notes in color, then any students using the notes would not have access to the same information.

Typically, professors have a lecture planned out before class starts and have notes prepared to follow their plan. However, when students ask unexpected questions or do not fully grasp the material, it is easy to deviate from this plan. For example, civil engineers at Bucknell University plan out their lectures by dividing a piece of paper into sixths and filling in each block with what they want to present (See Figure 1). Problems arise when information not included on these pieces of paper are written on the board (due to student questions etc.). When the professor is preparing to give the lecture the following year, he or she will have to remember what the previous year's students struggled with. Using a board capture system, professors could compare previous lectures with previous lecture notes to generate a more effective lecture plan.

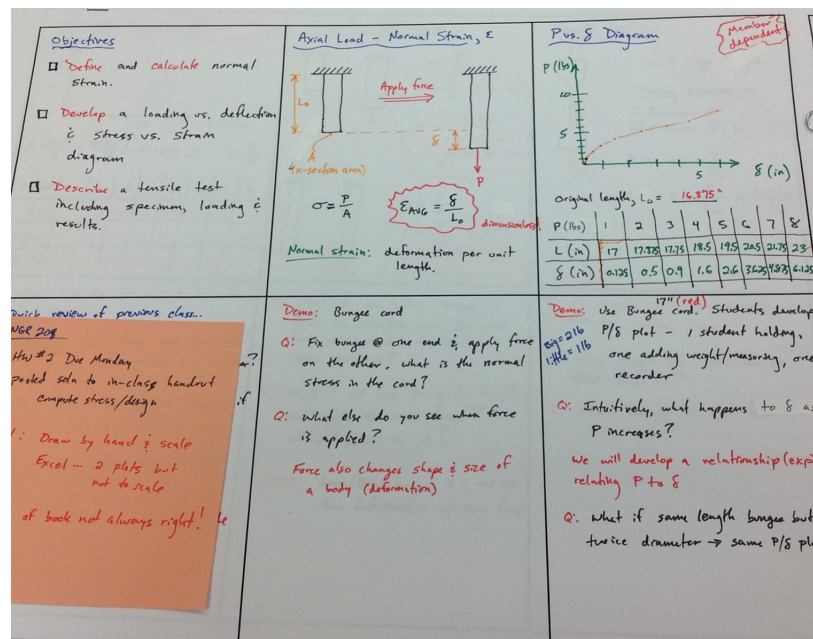


Figure 1: Image of civil engineering lecture notes. Orange note is an example of how lecture notes are recorded and altered. Image courtesy of Doug Gabauer 2012.

Background Information

How are things currently done?

Smart phone apps
Professional scribes

Useful Terminology

WE WILL GET THIS WITH MORE RESEARCH

Research

Competing Technologies

There are three general categories: phone apps, scanners, and electronic whiteboards.

Phone Apps-

Phone apps scan an image of a whiteboard and filter out the unnecessary information (See Figure 2). Several examples of phone apps are listed below.

- WhiteBoard Capture Pro
- Qipit White
- Genius Scan
- JotNot Scanner Pro

Scanners-

Scanners are pieces of hardware that attach to white boards that will track movements on the board (some with the usage of an electronic pen). These products will not be fully suited to this project because they require installation and calibration, which violates the idea of portability. Several examples of scanners include:

- MimioCapture
- eBeam System 3
- Interlink
- FreeBeam

Related Technologies

SMART boards

Research Data

Microsoft Research lab paper

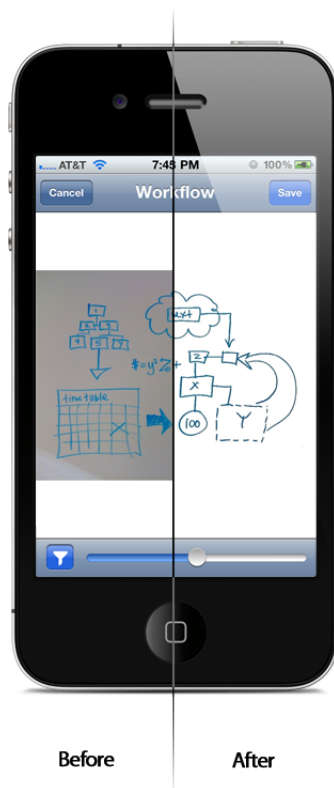


Figure 2: Advertisement demonstrating the image filtering capabilities of the WhiteBoard Capture Pro iPhone app. App eliminates discoloration of board due to glare. Taken from <http://www.beetlebugsoftware.com>.