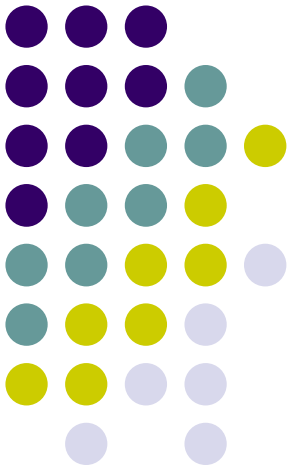
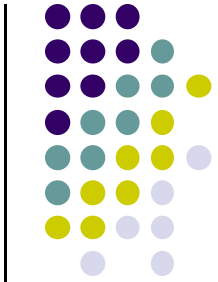
CS 528 Mobile and Ubiquitous Computing
Project Proposals

Emmanuel Agu

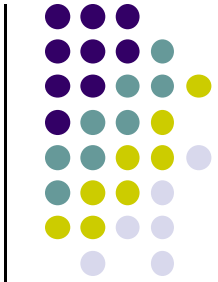


Proposal



- Submit (Written 2 pages max PDF file): due next week!!
  - Introduction
    - List team members (or alone)
    - Why is problem important?
    - E.g. Find statistics: How much time, money is being wasted on this problem today?
    - Potential gain: how will your solution save time, money, etc?
  - Related work
    - What other research has been done to solve this and similar problems (academic + commercial apps)
    - How is your work different?

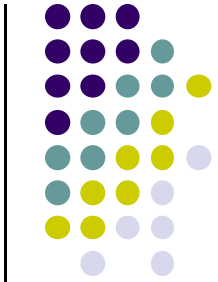
Proposal



- Methodology/Design/Tools:
  - Brain storm!
  - Summary of what you intend to do
  - How you intend to do it?
  - Don’t promise too much
- Proposal emailed + summaries by next class
- If you are confused, email me

- **Note:** You are allowed to change your project later. But not good!

Coming up with a Project



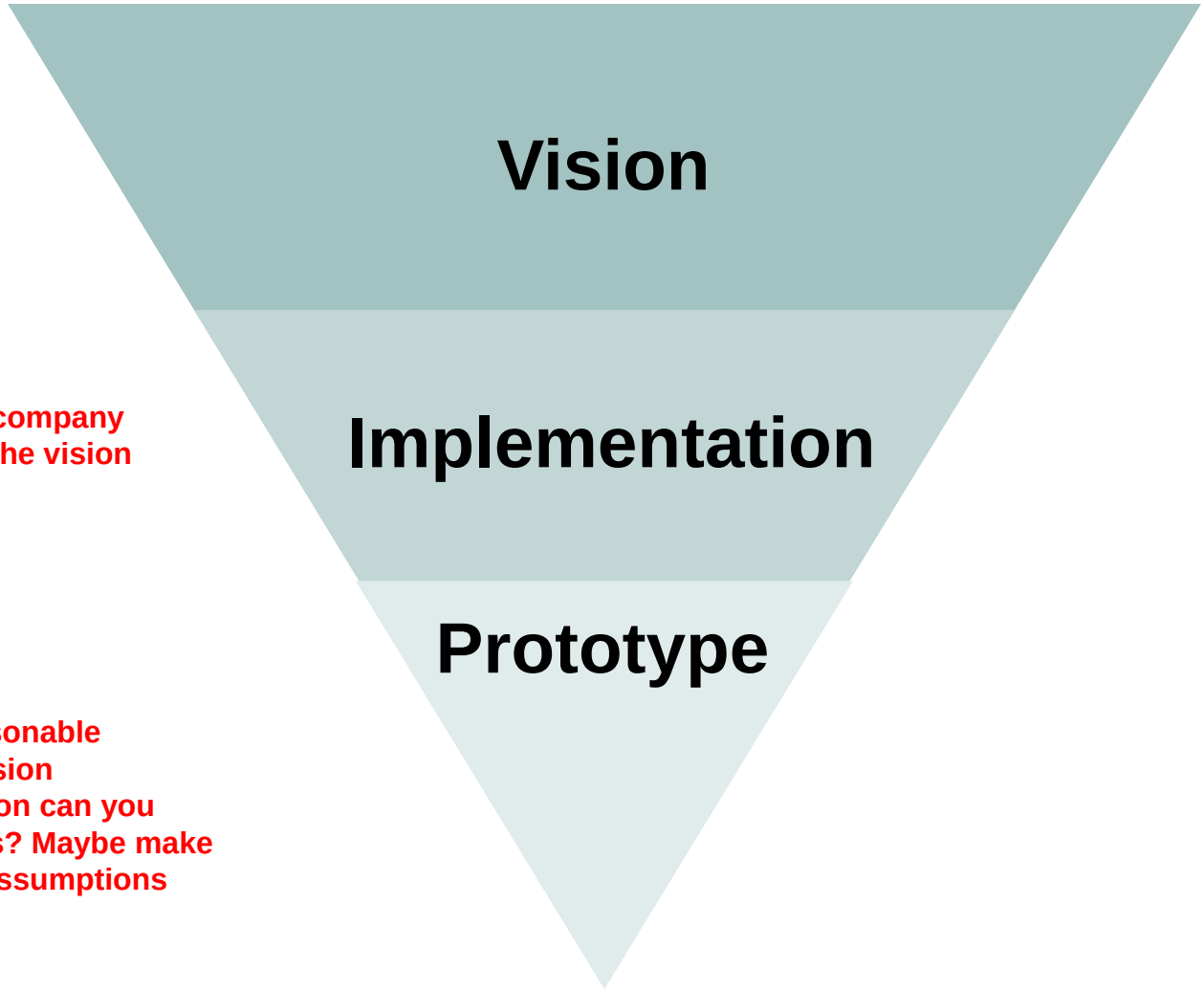
1. Click on papers,
    i. What areas you like?
    ii. What are your strengths? Machine learning? Signal processing?
2. Find papers you like within area or search ACM digital library or IEEE Xplore
3. Can each paper be extended?
    a. Look at future work
    b. Repeat experiments + other things they didn't try. E.g.
        i. Re-implement a simple idea: E.g. Bewell
        ii. Implement PART(S) OF complex idea (e.g. place sense paper)
        iii. Propose new idea based on your prior knowledge/experience (GREAT!!! Maybe publishable?)

Separate Vision, Implementation and Prototype

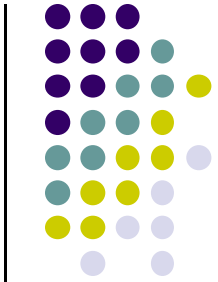
1. Big picture if funds/time not an issue (e.g. company of 200 employees over 6 years)

2. How would the company above implement the vision

3. Which reasonable Part of the vision Implementation can you do in 5 weeks? Maybe make Simplifying assumptions



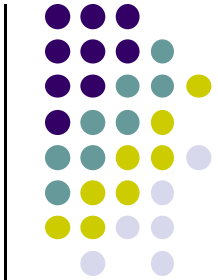
Some Project Ideas



- **Machine learning:**
  - Detect personality type from detecting/analyzing daily interactions.
  - E.g. number of friends seen per day, number of people talked to per day, activity levels/type, etc.

- **Signal/processing:**
  - Detect speaker, convert their speech to text, record
  - Detect emotion/stress levels from speech
  - Detect sleep quality detection from accelerometer, microphone (iSleep paper)

Some Project Ideas



- **Image/Video Analysis:**
  - Detect a person's emotion/mood from an image video of their face
  - Detect if a person/student watching a youtube video is engaged/not engaged

- **Mobile Twitter**
  - Search Twitter messages, analyze how much important mobile topics are being discussed (e.g. security, malware, health)