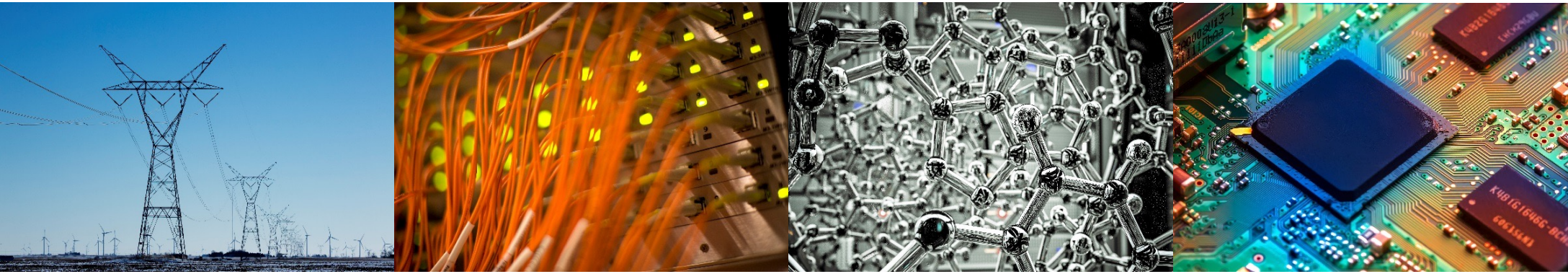
ECE 420- Mobile Application DSP Lab

Final Proposal Guideline



ILLINOIS
Electrical & Computer Engineering
GRAINGER COLLEGE OF ENGINEERING

Key Components of the Final Project Proposal

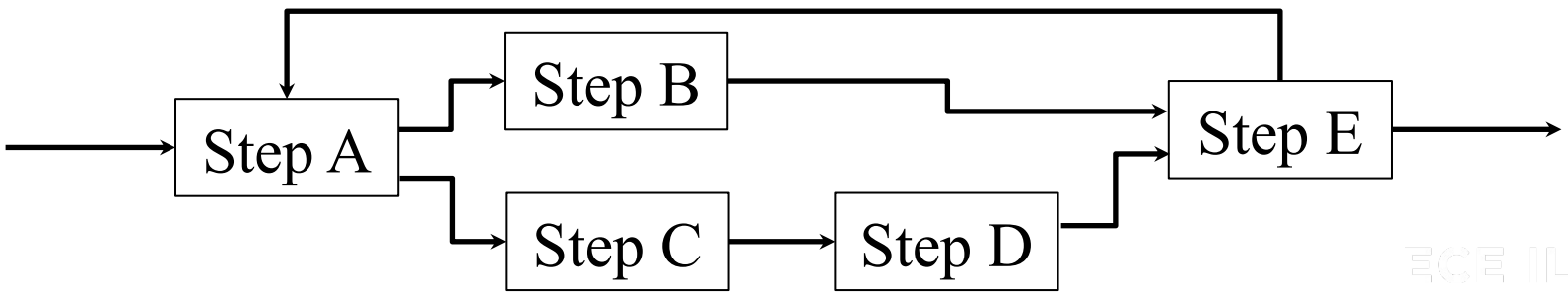
(not necessarily in this order, but should include all)

- Project Name
- Introductions
- Background
- Results from Assigned Lab
- Deliverable
- Milestones
- Testing and Validation Plan
- Contribution

- Project Name
  - Name your project.
    - This can be descriptive or eccentric (or both).
    - eg) Emotify, FitTrain, Security Video Trackng

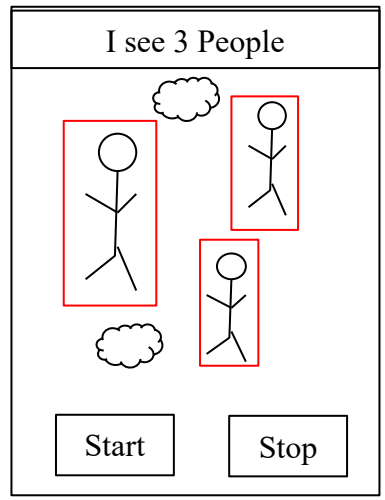
- Introductions
  - Give a very brief summary of your end project deliverable and what makes it stand out from other projects.
  - Describe the problem you are trying to solve and mention the algorithms you will be leveraging to solve them.

- Background
  - Previous work by others (Cite the works).
  - Summarize the approach taken in the algorithms you are using or comparing/contrasting to (in high-level).
  - Flow graphs, figures, equations
  - Make note of how you are planning to use, improve, or modify the algorithm in Android.
    - your aim should NOT just be “we will implement this paper on the tablet”.



- Results from Assigned Lab
  - *What did you do in Assigned Lab?*
  - *How did you evaluate your work?*
  - *Show results of your evaluation*
  - *Describe difficulties encountered*
  - The better you can **quantify** your success, the better!

- Deliverable
  - Final product to be delivered to a customer
  - *What is input and output?*
  - *What functionality the application will provide?*
  - *How the user will interact with your application?*
  - Use figures, diagrams, pictures!
    (even hand-drawn figures are fine)



1. Minimum Viable Product (MVP)
   comitted "minimum" deliverable
2. Stretch Goals
   time permitting features

✓ Encourage something that works with less functionality than a totally non-functional system

- Milestones
  - Your proposal will have to include two intermediate milestones (Final demo as 3rd milestone)
    - Give a high-level and clear goal.
      - *Bad: Implement the algorithm using the FFT Library and OpenCV and then test it.*
      - *Good: Implement the person detection step on the tablet. Given a single video frame, the detected people will be indicated by a box.*
  - Milestones may not be achieved on the desired schedule
    - If you want to revise your proposal, either for the milestones or the final deliverable, you should email your TA and the instructor with your proposed changes as early as possible.
  - Be realistic about your timeline
  - Meet and report to a TA (no need presentation)

- Testing and Validation Plan (For Android)
  - How will you demonstrate it works?
  - What inputs will you be using? Are those pre-existing or do they need to be generated?
  - What are the outputs? Is it objective or subjective? Can you collect metrics?
  - Start with ‘easy’ test cases, work your way up to more complex
    - This can establish that the algorithm is not fundamentally broken, but has limitations.
    - Determining those limitation is valuable knowledge!