

EE432 Final Project Suggestions

Note: Many have 2 parts...doing, and undoing

For this project, work in groups. You will need to:

- (1) Turn in a PowerPoint presentation (5-10 slides), use multimedia in the presentation where possible;
- (2) Present your presentation to the class during the last week of classes (5-10 minute presentation).
- (3) Turn in a ≤ 5 page written report, including figures, in MS Word (turn in a hard copy). Turn in code also.
- (4) Extra Credit: a 40" x 30" or 30" x 40" hard poster (see the Graphics folks in the Library).

0. If at all possible, do a final project in EE432 that supports your senior design project.

Some ideas:

1. Implement steganography (the art of hiding digital information).
2. Implement encryption/decryption.
3. Implement data compression/decompression.
4. Implement error control coding system (add errors, then find and correct automatically).
5. Denoising a signal using adaptive filtering or frequency filtering.
6. Determining the harmonic nature of a single instrument through a wide range of notes, then creating a music signal (i.e., programming a song) to demonstrate that the notes can be created with a computer. This would involve recording an actual instrument playing a set of notes, and analyzing the recording.
7. Control systems.
8. Target recognition using frequency analysis.
9. Target recognition using other means (e.g., time domain). This might include determining the spoken digit (0-9) in real-time with a microphone as the input.

You may have some other ideas—the project doesn't have to be MATLAB based, or doesn't have to be a coding project (could be hardware based). Submit your idea to me for approval.