Suggested project topics for E9-207

1) Linear prediction of speech.
2) Noise prediction and cancelation.
3) Design of high decimation/interpolation FIR filters.
4) Sub-band coding of speech or images.
5) Echo cancelation algorithms.
6) Design of efficient analysis and synthesis filter banks.
7) Practical fractional sampling rate conversion architectures for audio.
8) Optimum receiver design based on signal geometry.
9) Pattern classification based on Bayesian hypothesis.
10) State variable methods for power control.
11) Theoretical investigation into distance measures.
12) Application of KL transforms for signal compression.
13) Applications of wavelets for de-noising, transient detection etc.
14) Inverse problems and reconstruction from projections.

If you have any other topic in mind, please feel free to talk to me on this. You are most welcome to work on it.
I am looking for the following things in your report.
•Clarity of thoughts/understanding.
•Problem formulation
•Reasonable experimentation.
•Application of a signal processing method or technique.
•Well written report not exceeding 4 pages that summarizes your work.
•A good class presentation (15 mins+5 minutes questionnaire per project).
•Innovation/originality either theoretical or practical in nature will be heavily rewarded even to an extent of a grade up-shift. Since this fetches a significant portion of your final grade, and part of the final exam, please make an honest effort towards these goals.