

National Tsing Hua University
Department of Electrical Engineering
EE3660 Introduction to Digital Signal Processing
Spring 2020

Term Project (25%)

Assigned on Apr 30, 2020

Due by **Jun 24**, 2020

Objectives:

You will need to use what you learned in this course to 1) analyze real-life systems and/or 2) develop a specific application. You can use any programming language and any available library for your term project. However, remember to highlight **your contribution** in detail.

Example Topics (your own proposal is preferred):

Type I: System analysis

1. Frequency analysis of musical instruments
2. Frequency analysis of human sounds
3. Resolution analysis for cameras

Type II: Specific applications

1. Digital frequency tuning for musical instruments
2. Voice changer
3. Resolution recovery (deblurring) for cameras
4. Implementation and application of multi-rate filter banks
5. Implementation and application of sparse FFT

Teaming:

One team can have up to two members. The grading may also depend on the contribution of each member (if provided).

Project Schedule:

- | | |
|-----------------------|---|
| Apr 30, 2020: | Project announcement |
| May 28 , 2020: | Project proposal with team members identified |
| Jun 24, 2020: | Project report (no late submission is allowed) |

Deliverable (per team basis):

1. Project proposal (see template *E3660_project_proposal_template.docx*)
2. Project report
3. Source code and executable; test audio/image/video if any

Grading Rule (100%):

1. Project proposal (10%)
2. Project report (20%)
3. Originality/novelty (20%)
4. Difficulty/completeness (30%)
5. Experiment/discussion (20%)

***Additional Bonus (15%):**

- Top three teams will be awarded (the reports will be made public)