Machine Learning and Pattern Recognition [FVE6013]
Statistical Pattern Recognition [ICE7046]

PCA-based face recognition

Final project

Requirements

- Implement a face recognition system using PCA
- Can use any programming language (MATLAB, VC, python, …)
- Can use dependent libraries
- Use the training photos for training
- Use Test folder for testing

Result report

- Use test folder
- Use pairs of same person to compute the score distribution of genuine matching scores
- Use the first image of each person to matching with the first images of others to compute the imposter matching scores
- Based on the genuine/imposter matching scores, set a thresholding for recognition
- Compute the False Matching Rate and False Non-Matching Rate based on the threshold
- Verification mode only (see PCA_face.pdf page 8)

Result report

- Compute the FMR and FNMR for different numbers of Principle Components used
  - 100
  - 500
  - 1000
  - 2000
  - 5000

Grading criteria

- Performance
  - FMR, FMNR
  - Runtime
  - Understanding
  - Extra observations or comments

Presentation and submission

- Each team will summarize the result to present in the class (around 15mins for each team)
  - Summarize the theory and practical experience
  - Report results as requirements
  - Findings and conclusions
  - Run the live demo

- Submission to online gate:
  - PPT, source code
  - Before the class time

Support

- Questions can be sent to huan.nguyen@inha.ac.kr
- Visit Inha Dream center, room 209