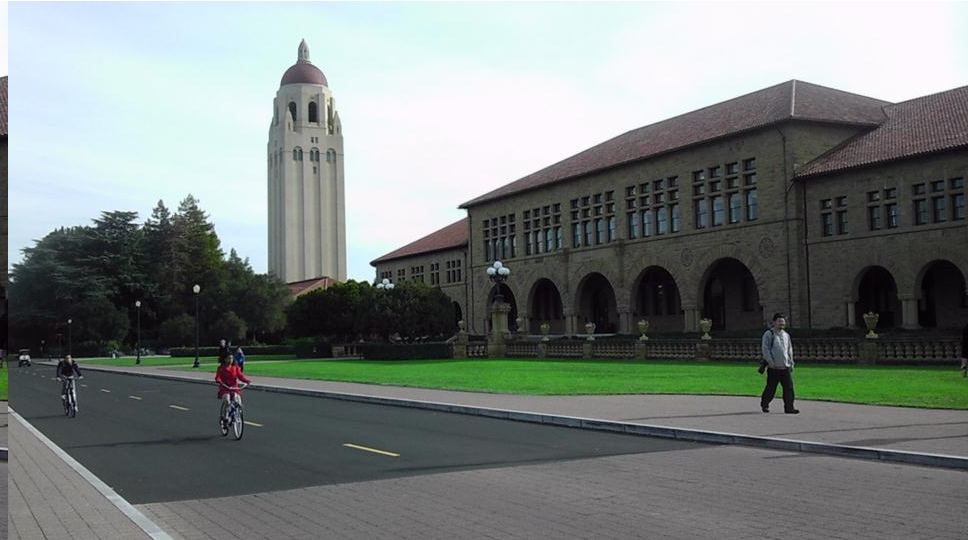# Term Project:
Compression of Stereo Image Pairs

Left view   Right view

Goals

- Develop and implement the most efficient compression scheme

- Minimize average bit-rate over 7 unknown test image pairs

- Reconstruction PSNR at least 37 dB <u>for each image</u>

PSNR Calculation

- RGB to YCbCr conversion

- Down-sampling Cb and Cr components by two

- Distortion = Mean Squared Error (MSE) between original and decoded image pairs across YCbCr components

  → less emphasis on Cb and Cr distortion

- PSNR = $10 \log_{10} (255^2 / MSE)$

- Penalty for PSNR < 37dB → Include uncompressed image pairs' size in bit-rate calculations

Final Project - General

- Work in groups of 2-3 students, 50 hours per person
- Let us know who is in your group by **Fri, Feb 17**
- Final submission includes MATLAB code, presentation slides and project report
- Algorithms must be implemented from scratch – o.k. to use code of others for comparison, but not for submission
- Presentations and reports will be posted online
- Project grade based on
  - Originality, technical quality 25%
  - Competitive performance 25%
  - Project report 25%
  - Class-room presentation 25%

Project Submission

- MATLAB code Deadline: **Mon, Mar 12**

- Presentation slides Deadline: **Wed, Mar 14**

- Project report Deadline: **Thurs, Mar 15**

- Class-room presentations on **Thurs, Mar 15**

- More details and guidelines on presentations to be announced later

Project report

- Should be submitted as pdf

- 2000 words typical, 4000 words max., not including references

- Use IEEE conference paper as model

- Include graphs, pictures, and references

- Groups submit ONE report, with a break-down of who did what as an appendix to the report.

- Details of submission → Check website