**Outline of Seminar on Computational Photography**

Xiaowei Deng, Dec. 6, 2013

# Photometric calibration

* **Radiometric response function**

Camera calibration approaches: integrating sphere, calibration chart, multiple image algorithms

* **Noise level estimation**

*Liu. (2006, June).* ***Noise estimation from a single image****. In Computer Vision and Pattern Recognition, 2006 IEEE Computer Society Conference on (Vol. 1, pp. 901-908). IEEE.*

* **Vignetting**

*Zheng,(2008, June).* ***Single-image vignetting correction using radial gradient symmetry****. In Computer Vision and Pattern Recognition, 2008. CVPR 2008. IEEE Conference on (pp. 1-8). IEEE.*

# High dynamic range imaging

*Debevec. (2008, August).* ***Recovering high dynamic range radiance maps from photographs****. In ACM SIGGRAPH 2008 classes (p. 31). ACM.*

# Super-resolution and blur removal

Show some basic ideas, and some examples.

# Image matting and compositing

*Chuang.* ***A bayesian approach to digital matting****. In Computer Vision and Pattern Recognition, 2001. CVPR 2001. Proceedings of the 2001 IEEE Computer Society Conference on(Vol. 2, pp. II-264). IEEE.*

# Texture analysis and synthesis

Show some basic ideas, and some examples.