

# Orals

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## 1 Image-based Modeling

Review the fundamentals of Image-Based Modeling with an emphasis on light fields and Bidirectional Texture Functions:

- LEVOY, M. and HANRAHAN, P., Light Field Rendering. In SIGGRAPH. 1996
- GORTLER, S. J. et al., The Lumigraph. In SIGGRAPH. 1996
- MUELLER, G. et al., Acquisition, Synthesis and Rendering of Bidirectional Texture Functions. In Eurographics. State of the Art Reports 2004

## 2 Surface Light fields

Review surface light fields and light field mapping:

- WOOD, D. et al., Surface Light Fields for 3D Photography. In SIGGRAPH. 2000
- CHEN, W.-C. et al., Light Field Mapping: Efficient Representation and Hardware Rendering of Surface Light Fields. In SIGGRAPH. 2002
- HILLESLAND, K., MOLINOV, S. and GRZESZCZUK, R., Nonlinear Optimization Framework for Image-Based Modeling on Programmable Graphics Hardware. In SIGGRAPH. 2003

## 3 Data Approximation

Review approaches for incremental and scattered data approximation, including the Online Principal Components Analysis and Moving Least Squares:

- BRAND, M., *Incremental singular value decomposition of uncertain data with missing values*. Mitsubishi Electric Research Labs, 2004 (TR-2002-24). – Technical report
- WEDLAND, H., *Scattered Data Approximation*. Cambridge University Press, 2005, Cambridge Monographs on Applied and Computational Mathematics, Chapter 2
- MATUSIK, W., LOPER, M. and PFISTER, H., Progressively-Refined Reflectance Functions from Natural Illumination. In Eurographics Symposium on Rendering. 2004

## 4 High-Dynamic Range Lighting

Review methods for capturing and displaying High-Dynamic Range Lighting

- DEBEVEC, P. et al., Acquiring the Reflectance Field of a Human Face. In SIGGRAPH. 2000
- DEBEVEC, P. E., Rendering Synthetic Objects into Real Scenes: Bridging Traditional and Image-based Graphics with Global Illumination and High Dynamic Range Photography. In SIGGRAPH. 1998

## 5 Image Capture

Review approaches to image capture for IBR, including Multiplexed Illumination:

- MCALLISTER, D., LASTRA, A. and HEIDRICH, W., Efficient Rendering of Spatial Bi-directional Reflectance Distribution Functions. In Graphics Hardware. 2002
- SCHECHNER, Y. Y., NAYAR, S. K. and BELHUMEUR, P. N., A Theory of Multiplexed Illumination. In ICCV '03: Proceedings of the Ninth IEEE International Conference on Computer Vision. Washington, DC, USA: IEEE Computer Society, 2003, ISBN 0-7695-1950-4
- MASSELUS, V. et al., Relighting with 4D incident light fields. In SIGGRAPH. 2003
- MALZBENDER, T., GELB, D. and WOLTERS, H., Polynomial Texture Maps. In SIGGRAPH. 2001

## 6 Other Possibilities

These papers are also closely-related to my core topics.

- MCMILLAN, L. and BISHOP, G., Plenoptic Modeling: An Image-Based Rendering System. In SIGGRAPH. Los Angeles, California, 1995
- LENSCH, H. P. A. et al., Planned Sampling of Spatially Varying BRDFs. In Workshop on Rendering. 2003
- MATUSIK, W. et al., Image-based 3D photography using opacity hulls. SIGGRAPH, 2002
- MATUSIK, W. et al., A Data-Driven Reflectance Model. SIGGRAPH 2003
- BUEHLER, C. et al., Unstructured lumigraph rendering. In SIGGRAPH. ACM Press, 2001
- VASILESCU, M. A. O. and TERZOPOULOS, D., TensorTextures: Multilinear Image-Based Rendering. In SIGGRAPH. 2004