

Pieter Peers

University of Southern California,
Centers for Creative Technologies (ICT/USC)
13274 Fiji Way, Ste 507
Marina del Rey, CA, 90292
USA

+1-310-574-7810 (office)
+1-310-775-0547 (cell)
peers@ict.usc.edu

Professional Experience

- **Assistant Research Professor** 2009 - Present
 - University of Southern California (USC)
- **Senior Researcher** 2006 - Present
 - Graphics Lab, University of Southern California, Institute for Creative Technologies (ICT/USC)
- **Research Assistant** 2000 - 2006
 - Computer Graphics Research Group, K.U.Leuven
 - Supervisor: Prof. Dr. ir. Philip Dutré
Prof. Dr. ir. Yves D. Willems

Education

- **Katholieke Universiteit Leuven (K.U.Leuven)**, Leuven, Belgium August 2006
 - Ph.D. in Computer Science: Computer Graphics.
- **Katholieke Universiteit Leuven (K.U.Leuven)**, Leuven, Belgium September 2000
 - Licentiaat Informatica, (Master in Computer Science).

Publications

- **Books and Theses**
 - **Pieter Peers** “Sampling Reflectance Functions for Image-based Relighting” Ph.D. thesis, K.U.Leuven, August 22, 2006. 212+ix pages, ISBN 90-5682-735-9.
- **Journal Papers**
 - Ying Song, Xin Tong, Fabio Pellacini, **Pieter Peers**, “SubEdit: A Representation for Editing Measured Heterogenous Subsurface Scattering” *ACM Transactions on Graphics (TOG) (Proceedings of ACM SIGGRAPH 2009)*, New Orleans, USA, **Accepted**.
 - Tim Weyrich, **Pieter Peers**, Wojciech Matusik, Szymon Rusinkiewicz, “Fabricating Microgeometry for Custom Surface Reflectance” *ACM Transactions on Graphics (TOG) (Proceedings of ACM SIGGRAPH 2009)*, New Orleans, USA, **Accepted**.
 - Abhijeet Ghosh, Tongbo Chen, **Pieter Peers**, Cyrus A. Wilson, Paul Debevec “Estimating Specular Roughness and Anisotropy from Second Order Spherical Gradient Illumination” *Computer Graphics Forum (Proceedings of the Eurographics Symposium on Rendering)*, 28(4), June 2009.
 - **Pieter Peers**, Dhruv K. Mahajan, Bruce Lamond, Abhijeet Ghosh, Wojciech Matusik, Ravi Ramamoorthi, Paul Debevec, “Compressive Light Transport Sensing” *ACM Transactions on Graphics (TOG)*, Volume 28, Issue 1, Article 3, January 2009.

- Abhijeet Ghosh, Tim Hawkins, **Pieter Peers**, Sune Fredriksen, Paul Debevec, “Practical Modeling and Acquisition of Layered Facial Reflectance”, *ACM Transactions on Graphics (TOG) (Proceedings of ACM SIGGRAPH Asia 2008)*, Volume 27, Issue 5, Article 139, Singapore, December 2008.
- Wan-Chun Ma, Andrew Jones, Jen-Yuan Chiang, Tim Hawkins, Sune Frederiksen, **Pieter Peers**, Marko Vukovic, Ming Ouhyoung, Paul Debevec, “Facial Performance Synthesis using Deformation-driven Polynomial Displacement Maps”, *ACM Transactions on Graphics (TOG) (Proceedings of ACM SIGGRAPH Asia 2008)*, Volume 27, Issue 5, Article 121, Singapore, December 2008.
- **Pieter Peers**, Naoki Tamura, Wojciech Matusik, and Paul Debevec “Post-Production Facial Performance Relighting using Reflectance Transfer” *ACM Transactions on Graphics (TOG) (Proceedings of ACM SIGGRAPH 2007)*, Volume 26, Issue 3, Article 52, San Diego, USA, August 2007.
- Muath Sabha, **Pieter Peers**, and Philip Dutré “Texture Synthesis using Exact Neighborhood Matching” *Computer Graphics Forum*, 26-2, pages 131–142, June 2007.
- **Pieter Peers**, Karl vom Berge, Wojciech Matusik, Ravi Ramamoorthi, Jason Lawrence, Szymon Rusinkiewicz, and Philip Dutré “A Compact Factored Representation of Heterogeneous Subsurface Scattering” *ACM Transactions on Graphics (TOG) (Proceedings of ACM SIGGRAPH 2006)*, Volume 25, Issue 3, pages 746-753, Boston, USA, July 2006.
- Vincent Masselus, **Pieter Peers**, Philip Dutré, and Yves D. Willems “Relighting with 4D Incident Light Fields” *ACM Transactions on Graphics (TOG) (Proceedings of ACM SIGGRAPH 2003)*, Volume 22, Issue 3, pages 613–620, San Diego, USA, July 2003.

- **Internationally Refereed Conference Papers**

- Bruce Lamond, **Pieter Peers**, Abhijeet Ghosh, Paul Debevec, “Image-based Separation of Diffuse and Specular Reflections using Environmental Structured Illumination” *IEEE Computational Photography 2009*, San Francisco, April 2009.
- Wan-Chun Ma, Tim Hawkins, **Pieter Peers**, Charles-Felix Chabert, Malte Weiss, and Paul Debevec “Rapid Acquisition of Specular and Diffuse Normal Maps from Polarized Spherical Gradient Illumination” *Rendering Techniques 2007 (Eurographics Symposium on Rendering 2007)*, pages 183-194, Grenoble, France, June 2007.
- Thomas Koninckx, **Pieter Peers**, Philip Dutré, and Luc Van Gool “Scene-adapted Structured Light” *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR 2005)*, San Diego, USA, June 20-25, 2005.
- **Pieter Peers**, and Philip Dutré “Inferring Reflectance Functions from Wavelet Noise” *Rendering Techniques 2005 (Eurographics Symposium on Rendering 2005)*, pages 173–182, Konstanz, Germany, June 2005.
- Vincent Masselus, **Pieter Peers**, Philip Dutré, and Yves D. Willems “Smooth Reconstruction and Compact Representation of Reflectance Functions for Image-based Relighting” *Rendering Techniques 2004 (Eurographics Symposium on Rendering 2004)*, pages 287–298, Nörrköping, Sweden, June 2004.
- **Pieter Peers**, and Philip Dutré “Wavelet Environment Matting” *Rendering Techniques 2003 (Eurographics Symposium on Rendering 2003)*, pages 157–166, Leuven, Belgium, June 2003.

- **Miscellaneous**

- Cyrus A. Wilson, Abhijeet Ghosh, **Pieter Peers**, Jen-Yuan Chiang, Jay Busch, Paul Debevec “2D and 3D Facial Correspondences via Photometric Alignment” Technical Talk *SIGGRAPH 2009*, New Orleans, USA, August 2009.
- Abhijeet Ghosh, Tongbo Chen, **Pieter Peers**, Cyrus A. Wilson, Paul Debevec “Estimating Specular Roughness from Polarized Second Order Spherical Gradient Illumination” Technical Talk *SIGGRAPH 2009*, New Orleans, USA, August 2009.
- Wan-Chun Ma, Tim Hawkins, **Pieter Peers**, Charles-Felix Chabert, Malte Weiss, and Paul Debevec “A High-Resolution Face-Scanning System Using Polarized Gradient Illumination” Technical Sketch *SIGGRAPH 2007*, San Diego, USA, August 2007.
- Charles-Félix Chabert, Wan-Chun Ma, Tim Hawkins, **Pieter Peers**, and Paul Debevec “Fast Rendering of Realistic Faces With Wavelength-Dependent Normal Maps” Poster Presentation *SIGGRAPH 2007*, San Diego, USA, August 2007.

- Bruce Lamond, **Pieter Peers**, and Paul Debevec “Fast Image-based Separation of Diffuse and Specular Reflections” Technical Sketch *SIGGRAPH 2007*, San Diego, USA, August 2007.
- Philip Dutré, and **Pieter Peers** “Wavelet Environment Matting” Hierarchical Methods in Computer Graphics, Dagstuhl Seminar 03271, Dagstuhl, Germany, June 29–July 4, 2003.
- **Pieter Peers**, and Philip Dutré “Accurate Image Based Re-lighting through optimization” Poster presentation, *13th Eurographics Workshop on Rendering*, Pisa, Italy, June 2002.
- **Pieter Peers**, and Philip Dutré “Accurate Image Based Re-lighting through optimization” Technical Sketch, *SIGGRAPH 2002*, San Antonio, USA, July 2002.

- **Technical Reports**

- Hideshi Yamada, **Pieter Peers**, Paul Debevec “Compact Representation of Reflectance Fields using Clustered Sparse Residual Factorization” ICT Technical Report, ICT-TR-02-2009, June 17, 2009, ICT/USC 11 pages.
- **Pieter Peers**, Dhruv K. Mahajan, Bruce Lamond, Abhijeet Ghosh, Wojciech Matusik, Ravi Ramamoorthi, Paul Debevec “Compressive Light Transport Sensing” ICT Technical Report ICT-TR-05.2008, May 30, 2008, ICT/USC 17 pages.
- Bruce Lamond, **Pieter Peers**, Paul Debevec “Fast Image-based Separation of Diffuse and Specular Reflections” ICT Technical Report ICT-TR-02.2007, May 21, 2007, ICT/USC 7 pages.
- **Pieter Peers**, Tim Hawkins, Paul Debevec “A Reflective Light Stage” ICT Technical Report ICT-TR-04.2006, December 23, 2006, ICT/USC 18 pages.
- **Pieter Peers** and Philip Dutré “Update Rules for a Weighted Non-negative FH*G Factorization” Technical Report CW440, Department of Computer Science, K.U.Leuven, April 2006. 7 pages.
- **Pieter Peers**, Vincent Masselus and Philip Dutré “Free-form Acquisition of Shape and Appearance” Technical Report CW403, Department of Computer Science, K.U.Leuven, February 2005. 18 pages.
- **Pieter Peers** and Philip Dutré “Accurate Image Based Re-lighting through optimization” Technical Report CW336, Department of Computer Science, K.U. Leuven, April 2002. 17 pages.

Teaching Experience

- | | |
|---|---------------|
| Supervision of Master Students | 2001-2008 |
| • Supervised 2 students in 2001-2002, 4 students in 2002-2003, 3 students in 2003-2004, 3 students in 2004-2005, and 3 students in 2005-2006, 1 student in 2007-2008. | |
| (USC) CS 599 - Advanced Computer Graphics: | |
| • Photographic Image Synthesis | Spring 2009 |
| together with Prof. Paul Debevec, and Dr. Abhijeet Ghosh. | |
| • (KUL) Advanced Programming Structures | November 2005 |
| Replaced Prof. Dr. ir. Yves D. Willems for a single lecture. | |
| • (KUL) Computer Graphics | October 2004 |
| Replaced Prof. Dr. ir. Philip Dutré for a single lecture. | |
| • (KUL) Advanced Programming Structures | 2003-2005 |
| Teaching of advanced programming techniques (e.g., backtracking): exercises (approx. 45 students per year). | |
| • (KUL) Practical Sessions Computer Graphics | 2000-2006 |
| Designing and grading practical tests (approx. 60 students per year). | |
| • (KUL) Methodology of Computer Science | 2001-2004 |
| An introduction into JAVA: exercises (2 classes of 25 students per year). | |

- **(KUL) Structure and Organization of Computer Systems** 2000-2001
 An introduction into assembler languages: exercises (3 classes of 25 students).

Professional Activities

- **Program Committees**
 - VMV 2007 - 2009.
 - Eurographics (EG) 2009 - 2010.
 - Eurographics Symposium on Rendering (EGSR) 2009.
- **Reviewing**
 - *Conference Reviewing*
 - * ACM Siggraph 2004 - 2009.
 - * ACM Siggraph Asia 2008 - 2009.
 - * Eurographics Symposium on Rendering (EGSR) 2003 - 2009.
 - * Eurographics (EG) 2007 - 2010.
 - * Vision, Modeling and Visualization (VMV) 2007 - 2009.
 - * Pacific Graphics (PG) 2006.
 - * Graphics Interfrace (GI) 2008.
 - * IEEE International Conference on Computational Photography (ICCP) 2009.
 - * Asian Conference on Computer Vision (ACCV) 2009.
 - *Journal Reviewing*
 - * ACM Transactions on Graphics (TOG).
 - * Computer Graphics Forum (CGF).
 - * IEEE Transactions on Visualization and Computer Graphics (TVCG).
 - * Pattern Recognition.
 - * Image and Vision Computing (IVC).
 - * Computer and Graphics (CAG).

Memberships

- Eurographics Member since 2001
- ACM Siggraph Member since 2003
- IEEE Member since 2009
- Honorary BAEF (Belgian-American Education Foundation) Fellow since 2006

Additional Experiences

- **Representative in the Faculty Council** 2004 - 2005
 Elected representative of the research personnel of the department of computer science in the council of the faculty of applied sciences (K.U.Leuven).

System Administrator

2001 - 2006

- System Administration of the computer systems (Linux) of the Computer Graphics Research Group (K.U.Leuven).