
Research Interests: Realistic computer graphics, appearance modeling/acquisition, computational photography, vision/AI for graphics.

CURRENT APPOINTMENT:

Sr. Staff Research Scientist – Google XR (since Jan 2025).

Professor of Graphics & Imaging, Dept. of Computing, Imperial College London. (part-time since 2025)

PREVIOUS POSITIONS:

Founder and CTO/Chief Scientist – Lumirithmic Ltd, Imperial College spin-out (2021 - 2024).

Adjunct Professor, Dept. of Computer Science, NTNU, Norway (2020 - 2023)

Research assistant professor, Dept. of Computer Science, University of Southern California 2009-2012.

Senior computer scientist, Graphics Lab., USC Institute for Creative Technologies 2007-2012.

EDUCATION:

2003 – 2007 PhD in Computer Science. The University of British Columbia, Canada.
Supervisor - Prof. Wolfgang Heidrich.

2000 – 2003 MS in Computer Science, Stony Brook University, USA.
Advisor - Distinguished Prof. Arie Kaufman.

1996 – 2000 BE in Computer Science and Engineering, Gujarat University, India.

Ph.D. THESIS: Realistic Materials and Illumination Environments. The University of British Columbia, June 2007, (recipient of 2007 Alain Fournier PhD Thesis Award).

GRANTS AND CONTRACTS:

- **EPSRC Standard Grant EP/X011364/1** (with Prof. Stefanos Zafeiriou and Dr Tolga Birdal) – £1,053,555 (EPSRC contribution 80%). GNOMON: Deep Generative Models in non-Euclidean Spaces for Computer Vision & Graphics, 2023-26.
- **Imperial College EPSRC IAA Grant EP/R511547/1** – £88,240, Practical High-Quality Facial Capture, Jan. 2021 - Mar. 2022.
- **H2020 MSCA-ITN-2020 Grant 956585** – €312,173, Predicting Rendering in Manufacture and Engineering (PRIME), 2020-2024.
- **UKAEA Collaboration PhD co-funding** – £50K, Photorealistic Rendering of MAST Plasma for Inverse Analysis, 2020.
- **UK SIN-Korea Global Partnership Fund** – £10K for UK-Korea Focal Point Project, 2017.
- **NVIDIA GPU Grant** – Titan Xp GPU provided by Nvidia, 2017.
- **EPSRC Early Career Fellowship EP/N006259/1** – £1,255,111 (EPSRC contribution 80%), Computational imaging and analysis of scene appearance, Mar. 2016 - Feb. 2021.
- **Royal Society International Scientific Seminar** – £5,000 travel support + two nights stay for 20 participants at Chicheley Hall, Imaging in Graphics, Vision and Beyond, 2015-16.
- **EPSRC First Grant EP/M00192X/1** – £123,328 (EPSRC contribution 80%), On-site reflectometry in the real-world, 2015-16.
- **Google Faculty Research Award** – \$67.5K, On-site reflectometry in the real-world, 2014.
- **Royal Society Wolfson Research Merit Award** – £62.5K, Appearance modelling for realistic computer graphics, 2013-17.
- **NSF grant IIS-1016703** (with Dr. Pieter Peers) – \$475K, Higher order statistics for appearance modeling, 2010-13.
- **AVON contract** – \$100K, Acquisition and rendering of faces with and without makeup, 2010-11.
- **USC-ICT seedling grant** (with Dr. Louis-Philippe Morency) – \$100K, Appearance models for facial expression recognition, 2009-10.

RECOGNITION AND AWARDS:

- Significant contribution towards a **Technical Achievement Award** in 2019 from the **Academy of Motion Picture Arts and Sciences** for **USC-ICT's Lightstage Facial Capture System**.
- **EPSRC Early Career Fellowship** 2016-21.
- **Royal Society Wolfson Research Merit Award** 2013-17.
- **Motion Picture Film Credit** – AVATAR, Lightstage facial capture, 2009.
- **Alain Fournier Thesis Award** – Best Canadian PhD thesis in computer graphics in 2007.
- **IEEE Marr Prize Honorable Mention** – ICCV 2007 best paper award.
- **University Graduate Fellowship** – The University of British Columbia, 2005 - 06.
- **ATI Technologies Fellowship** 2004 - 05 (4 awards world-wide).
- **IRIS/Precarn Fellowship** 2003 - 04.
- **University Fellowship** – Stony Brook University, 2002 - 03.

JOURNAL PUBLICATIONS:

- **Inverse rendering of fusion plasmas: Inferring plasma composition from imaging systems.** Ekin Öztürk, Robert James Akers, Stanislas Pamela, The MAST Team, Pieter Peers, and Abhijeet Ghosh. In: Nuclear Fusion **65** 026020, Jan 2025.
- **Realistic Facial Age Transformation with 3D Uplifting.** Xiaohui Li, Giuseppe Claudio Guarnera, Arvin Lin, Abhijeet Ghosh. Computer Graphics Forum (Proc. EGSR), 43(4), 2024.
- **Neural Shading Fields for Efficient Facial Inverse Rendering.** Gilles Rainer, Lewis Bridgeman, Abhijeet Ghosh. Computer Graphics Forum (Proc. Pacific Graphics), 42(7), 2023.
- **Deep Shape and SVBRDF Estimation using Smartphone Multi-lens Imaging.** Chongrui Fan, Yiming Lin, Abhijeet Ghosh. Computer Graphics Forum (Proc. Pacific Graphics), 42(7), 2023.
- **Practical Acquisition of Shape and Plausible Appearance of Reflective and Translucent Objects.** Arvin Lin, Yiming Lin, Abhijeet Ghosh. Computer Graphics Forum (Proc. EGSR), 42(4), 2023.
- **AvatarMe++: Facial Shape and BRDF Inference with Photorealistic Rendering-Aware GANs.** Alexandros Lattas, Stylianos Moschoglou, Baris Gecer, Stylianos Ploumpis, Vasileios Triantafyllou, Abhijeet Ghosh, Stefanos Zafeiriou. IEEE Trans. on Pattern Analysis and Machine Intelligence (PAMI), pp. 9269-9284, vol. 44, Dec. 2022.
- **Single-Shot High-Quality Facial Geometry and Skin Appearance Capture.** Jeremy Riviere, Paulo Gotardo, Derek Bradley, Abhijeet Ghosh, Thabo Beeler. ACM Transactions on Graphics (Proc. SIGGRAPH), 39(4), 2020.
- **Practical Measurement and Reconstruction of Spectral Skin Reflectance.** Yuliya Gitlina, Giuseppe Claudio Guarnera, Daljit Singh Dhillon, Jan Hansen, Alexandros Lattas, Dinesh Pai, Abhijeet Ghosh. Computer Graphics Forum (Proc. EGSR), 39(4), 2020.
- **Unified Neural Encoding of BTFs.** Gilles Rainer, Abhijeet Ghosh, Wenzel Jakob, Tim Weyrich. Computer Graphics Forum (Proc. Eurographics), 39(2), 12 pages, 2020.
- **On-Site Example-Based Material Appearance Acquisition.** Yiming Lin, Pieter Peers, Abhijeet Ghosh. Computer Graphics Forum (Proc. EGSR), 38(4), 2019.
- **Neural BTF Compression and Interpolation.** Gilles Rainer, Wenzel Jakob, Abhijeet Ghosh, Tim Weyrich. Computer Graphics Forum (Proc. Eurographics), 38(2), 2019.
- **Acquiring Spatially Varying Appearance of Printed Holographic Surfaces.** Antoine Toisoul, Daljit Singh Dhillon, Abhijeet Ghosh. ACM Transactions on Graphics (Proc. SIGGRAPH Asia), 37(6), 2018.
- **Practical Dynamic Facial Appearance Modeling and Acquisition.** Paulo Gotardo, Jeremy Riviere, Derek Bradley, Abhijeet Ghosh, Thabo Beeler. ACM Transactions on Graphics (Proc. SIGGRAPH Asia), 37(6), 2018.
- **Polarized Light Field Imaging for Single-Shot Reflectance Separation.** Jaewon Kim and Abhijeet Ghosh. Sensors (special issue Snapshot Multi-Band Spectral and Polarization Imaging Systems), 18(11):3803 2018.
- **Polarization Imaging Reflectometry in the Wild.** Jérémy Riviere, Ilya Reshetouski, Luka Filipi, Abhijeet Ghosh. ACM Transactions on Graphics (Proc. SIGGRAPH Asia), 36(6), 2017.
- **Practical Acquisition and Rendering of Diffraction Effects in Surface Reflectance.** Antoine Toisoul and Abhijeet Ghosh. ACM Transactions on Graphics, 36(5), 2017 (presented at SIGGRAPH 2017).
- **BRDF Representation and Acquisition.** Dar'ya Guarnera, Giuseppe Claudio Guarnera, Abhijeet Ghosh, Cornelia Denk, Mashuda Glencross. Computer Graphics Forum (Eurographics'16 STAR Report), 35(2), 2016.
- **Near-Instant Capture of High-Resolution Facial Geometry and Reflectance.** Graham Fyffe, Paul Graham, Borom Tunwattamong, Abhijeet Ghosh, Paul Debevec. Computer Graphics Forum (Proc. Eurographics), 35(2), 2016.
- **Mobile Surface Reflectometry.** Jérémy Riviere, Pieter Peers, Abhijeet Ghosh. Computer Graphics Forum, 35(1): 191-202, 2016 (presented at Eurographics 2016).
- **Skin Microstructure Deformation with Displacement Map Convolution.** Koki Nagano, Graham Fyffe, Oleg Alexander, Jernej Barbič, Hao Li, Abhijeet Ghosh, Paul Debevec. ACM Transactions on Graphics (Proc. SIGGRAPH), 34(4), 2015.

- **Acquiring Reflectance and Shape from Continuous Spherical Harmonic Illumination.** Borom Tunwattanapong, Graham Fyffe, Paul Graham, Jay Busch, Xueming Yu, Abhijeet Ghosh, Paul Debevec. ACM Transactions on Graphics (Proc. SIGGRAPH), 32(4), 2013.
- **Estimating Diffusion Parameters from Polarized Spherical Gradient Illumination.** Yufeng Zhu, Pradeep Garigipati, Pieter Peers, Paul Debevec, Abhijeet Ghosh. IEEE CG&A Special Issue on Scattering May/June 2013.
- **Measurement Based Synthesis of Facial Microgeometry.** Paul Graham, Borom Tunwattanapong, Jay Busch, Xueming Yu, Andrew Jones, Paul Debevec, Abhijeet Ghosh. Computer Graphics Forum (Proc. Eurographics), 32(2), 2013.
- **Exploring the Effect of Illumination on Automatic Expression Recognition using the ICT-3DRFE Database.** Giota Stratou, Abhijeet Ghosh, Paul Debevec, Louis-Philippe Morency. Image and Vision Computing, 30(10), 728-737, 2012.
- **Multiview Face Capture using Polarized Spherical Gradient Illumination.** Abhijeet Ghosh, Graham Fyffe, Borom Tunwattanapong, Jay Busch, Xueming Yu, Paul Debevec. ACM Transactions on Graphics (Proc. SIGGRAPH Asia), 30(6), 2011.
- **Circularly Polarized Spherical Illumination Reflectometry.** Abhijeet Ghosh, Tongbo Chen, Pieter Peers, Cyrus A. Wilson, Paul Debevec. ACM Transactions on Graphics (Proc. SIGGRAPH Asia), 29(5), 2010.
- **Temporal Upsampling of Performance Geometry using Photometric Alignment.** Cyrus A. Wilson, Abhijeet Ghosh, Pieter Peers, Jen-Yuan Chiang, Jay Busch, Paul Debevec. ACM Transactions on Graphics, 29(2), March 2010.
- **A Basis Illumination Approach to BRDF Measurement.** Abhijeet Ghosh, Wolfgang Heidrich, Shruthi Achutha, and Matthew O'Toole. International Journal of Computer Vision (Marr Prize special issue: ICCV07), 90(2): 183-197, 2010.
- **Estimating Specular Roughness and Anisotropy from Second Order Spherical Gradient Illumination.** Abhijeet Ghosh, Tongbo Chen, Pieter Peers, Cyrus A. Wilson, Paul Debevec. Computer Graphics Forum (Proc. EGSR), 28(4), 1161-1170, 2009.
- **Compressive Light Transport Sensing.** Pieter Peers, Dhruv K. Mahajan, Bruce Lamond, Abhijeet Ghosh, Wojciech Matusik, Ravi Ramamoorthi, Paul Debevec. ACM Transactions on Graphics, 28(1), January 2009.
- **Practical Modeling and Acquisition of Layered Facial Reflectance.** Abhijeet Ghosh, Tim Hawkins, Pieter Peers, Sune Frederiksen, Paul Debevec. ACM Transactions on Graphics (Proc. SIGGRAPH Asia), 27(5), 2008.
- **Correlated Visibility Sampling for Direct Illumination.** Abhijeet Ghosh and Wolfgang Heidrich. The Visual Computer (Proc. of Pacific Graphics) 22: 693-701, 2006.
- **High Dynamic Range Display Systems.** Helge Seetzen, Wolfgang Heidrich, Wolfgang Stuerzlinger, Greg Ward, Lorne Whitehead, Matthew Trentacoste, Abhijeet Ghosh, Andrejs Vorozcovs. ACM Transactions on Graphics (Proc. SIGGRAPH), 23(3): 760-768, 2004.
- **Simple Blurry Reflections with Environment Maps.** Michael Ashikhmin and Abhijeet Ghosh. Journal of Graphics Tools, 7(4): 3-8, 2002.

CONFERENCE PUBLICATIONS:

- **Two-shot Shape and SVBRDF Reconstruction of Human Faces with Albedo-Conditioned Diffusion.** Chongrui Fan, Yiming Lin, Arvin Lin, Abhijeet Ghosh. Eurographics 2025 Short Papers.
- **Single-Shot Facial Appearance Acquisition without Statistical Appearance Priors.** Guan Yu Soh, Abhijeet Ghosh. Eurographics 2025 Short Papers.
- **Optimal OLAT Alignment for Image Based Relighting with Color-Multiplexed OLAT Sequence.** Arvin Lin, Abhijeet Ghosh. Proc. of European Conference on Visual Media Production (CVMP), 2024.
- **High-Quality Facial Geometry from Sparse Heterogeneous Cameras under Active Illumination.** Lewis Bridgeman, Gilles Rainer, Abhijeet Ghosh. Proc. of European Conference on Visual Media Production (CVMP), 2024.
- **Practical RGB Measurement of Fluorescence and Blood Distributions in Skin.** Emilie Nogu  , Arvin Lin, Xiaohui Li, Giuseppe Claudio Guarnera, Abhijeet Ghosh. Proc. of Color Imaging Conference (CIC), Oct. 2024.
- **High Quality Neural Relighting using Practical Zonal Illumination.** Arvin Lin, Yiming Lin, Xiaohui Li, and Abhijeet Ghosh. Proc. of Eurographics Symposium on Rendering (EGSR), July 2024.
- **Practical Measurement and Neural Encoding of Hyperspectral Skin Reflectance.** Xiaohui Li, Giuseppe Claudio Guarnera, Arvin Lin, Abhijeet Ghosh. International Conference on 3D Vision (3DV), March 2024.
- **Practical and Scalable Desktop-based High-Quality Facial Capture.** Alexandros Lattas, Yiming Lin, Jayanth Kannan, Ekin Ozturk, Luca Filipi, Giuseppe Claudio Guarnera, Gaurav Chawla, Abhijeet Ghosh. European Conference on Computer Vision (ECCV), Oct. 2022 (oral).
- **Polarization Imaging Surface Reflectometry using Near-field Display.** Emilie Nogu  , Yiming Lin, Abhijeet Ghosh. Eurographics Symposium on Rendering (EGSR), July, 2022.
- **Spectral Upsampling Approaches for RGB Illumination.** Giuseppe Claudio Guarnera, Yuliya Gitlina, Valentin Deschaintre, Abhijeet Ghosh. Eurographics Symposium on Rendering (EGSR), July, 2022.
- **Neural Plasma Reconstruction for Diagnostic Imaging.** Ekin   zt  rk, Rob Akers, Abhijeet Ghosh, Stanislas Pamela, Pieter Peers, The MAST Team. EPS Conference on Plasma Physics, June 2022.

- **Deep Polarization Imaging for 3D Shape and SVBRDF Acquisition.** Valentin Deschaintre, Yiming Lin, Abhijeet Ghosh. IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), June, 2021 (oral).
- **AvatarMe: Realistically Renderable 3D Facial Reconstruction "in-the-wild".** Alexandros Lattas, Stylianos Moschoglou, Baris Gecer, Stylianos Ploumpis, Vasileios Triantafyllou, , Abhijeet Ghosh, Stefanos Zafeiriou. IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), July 2020.
- **Diffuse-Specular Separation using Binary Spherical Gradient Illumination.** Christos Kampouris, Stefanos Zafeiriou, Abhijeet Ghosh. Proc. of Eurographics Symposium on Rendering (EGSR EI&I), June 2018.
- **ICL Multispectral Lightstage: building a versatile LED sphere with off-the-shelf components.** Christos Kampouris and Abhijeet Ghosh. Proc. of EG Workshop on Material Appearance Modeling (MAM), June 2018.
- **Real-time Rendering of Realistic Surface Diffraction with Low Rank Factorization.** Antoine Toisoul and Abhijeet Ghosh. European Conference on Visual Media Production (CVMP), Dec. 2017.
- **ThirdLight: Low-Cost and High-Speed 3D Interaction Using Photosensor Markers.** Jaewon Kim, Gyuchull Han, Hwasup Lim, Shahram Izadi, Abhijeet Ghosh. European Conference on Visual Media Production (CVMP), Dec. 2017.
- **Acquiring Axially-Symmetric Transparent Objects using Single-View Transmission Imaging.** Jaewon Kim, Ilya Reshetouski, and Abhijeet Ghosh. IEEE Conference on Computer Vision and Pattern Recognition (CVPR), July 2017.
- **Image-Based Relighting using Room Lighting Basis.** Antoine Toisoul and Abhijeet Ghosh. European Conference on Visual Media Production (CVMP), Dec. 2016.
- **Efficient surface diffraction renderings with Chebyshev approximations.** Daljit Singh Dhillon and Abhijeet Ghosh. SIGGRAPH Asia'16 Technical Briefs, Dec. 2016.
- **Fine-grained Material Classification using Micro-geometry and Reflectance.** Christos Kampouris, Stefanos Zafeiriou, Abhijeet Ghosh, Sotiris Malassiotis. European Conference on Computer Vision (ECCV), October 2016.
- **Single-shot layered reflectance separation using a polarized light field camera.** Jaewon Kim, Shahram Izadi, Abhijeet Ghosh. Proc. of Eurographics Symposium on Rendering (EGSR) EI&I, June 2016.
- **Rerendering Landscape Photographs.** Pu Wang, Diana Bicanzan, Abhijeet Ghosh. European Conference on Visual Media Production (CVMP), 2014.
- **Estimating Surface Normals From Spherical Stokes Reflectance Fields.** Giuseppe Claudio Guarnera, Pieter Peers, Paul Debevec, Abhijeet Ghosh. ECCV Workshop on Color and Photometry in Computer Vision (CPCV), 2012.
- **Practical Image-Based Relighting and Editing with Spherical Harmonics and Local Lights.** Borom Tunwattanapong, Abhijeet Ghosh, Paul Debevec. European Conference on Visual Media Production (CVMP), London, 2011.
- **Facial Cartography: Interactive Scan Correspondance.** Cyrus A. Wilson, Oleg Alexander, Borom Tunwattanapong, Pieter Peers, Abhijeet Ghosh, Jay Busch, Arno Hartholdt, Paul Debevec. ACM/Eurographics Symposium on Computer Animation (SCA) 2011.
- **Effect of Illumination on Automatic Expression Recognition: A Novel 3D Relightable Facial Database.** Giota Stratou, Abhijeet Ghosh, Paul Debevec, Louis-Philippe Morency. IEEE International Conference on Automatic Face and Gesture Recognition (FG 2011), Santa Barbara, USA, March 2011.
- **Image-based Separation of Diffuse and Specular Reflections using Environmental Structured Illumination.** Bruce Lamond, Pieter Peers, Abhijeet Ghosh, Paul Debevec. International Conference on Computational Photography (ICCP), April 2009.
- **BRDF Acquisition with Basis Illumination.** Abhijeet Ghosh, Shruthi Achutha, Wolfgang Heidrich, and Matthew O'Toole. Proc. of IEEE International Conference on Computer Vision (ICCV) 2007 (oral presentation, Marr Prize Honorable mention).
- **Active Learning from Discrete Choice Data.** Eric Brochu, Nando de Freitas and Abhijeet Ghosh. Advances in Neural Information Processing Systems (NIPS) 2007.
- **Sequential Sampling for Dynamic Environment Map Illumination.** Abhijeet Ghosh, Arnaud Doucet, and Wolfgang Heidrich. Proc. of Eurographics Symposium on Rendering 2006, pp.115-126.
- **Real Illumination from Virtual Environments.** Abhijeet Ghosh, Matthew Trentacoste, Helge Seetzen and Wolfgang Heidrich. Proc. of Eurographics Symposium on Rendering 2005, pp. 243-252.
- **Bidirectional Importance Sampling for Direct Illumination.** David Burke, Abhijeet Ghosh and Wolfgang Heidrich. Proc. of Eurographics Symposium on Rendering 2005, pp. 147-156.
- **Volume Rendering for High Dynamic Range Displays.** Abhijeet Ghosh, Matthew Trentacoste and Wolfgang Heidrich. Proc. of Volume Graphics 2005, pp. 91-98.
- **Hardware Assisted Multichannel Volume Rendering.** Abhijeet Ghosh, Poojan Prabhu, Arie Kaufman and Klaus Mueller. Computer Graphics International, July 2003: 2-7, IEEE Computer Society Press.

INVITED CONTRIBUTIONS:

- **Light Stage.** Abhijeet Ghosh. Encyclopedia of Color Science and Technology, 2nd Edition, 2020.
- **Measurement-Based Modelling of Facial and Material Appearance.** Abhijeet Ghosh. BMVC'16 Conference Tutorial, York, Sept. 2016.

- **Cook-Torrance BRDF model.** Abhijeet Ghosh. Computer Vision: a reference guide, pp. 146 – 152, 2014.
- **Measurement and Modeling of Detailed Facial Reflectance.** Abhijeet Ghosh. SIGGRAPH Asia 2012 Technical Brief and Talk.

OTHER REFEREED CONTRIBUTIONS:

- **Material Capture and Representation with Applications in Virtual Reality.** Giuseppe Claudio Guarnera, Abhijeet Ghosh, Ian Hall, Mashuda Glencross, Dar'ya Guarnera. SIGGRAPH 2017 Short Course.
- **Practical Acquisition of Translucent Liquids using Polarized Transmission Imaging.** Jaewon Kim and Abhijeet Ghosh. SIGGRAPH 2017 poster.
- **Real-time Rendering of Realistic Surface Diffraction with Low Rank Factorization.** Antoine Toisoul and Abhijeet Ghosh. SIGGRAPH 2017 poster.
- **Capturing and Representing BRDFs for Virtual Reality.** Dar'ya Guarnera, Giuseppe Claudio Guarnera, Abhijeet Ghosh, Ian Hall, Mashuda Glencross. SIGGRAPH Asia 2016 Short Course.
- **Near Instant Capture of High Resolution Facial Geometry and Reflectance.** Paul Graham, Graham Fyffe, Borom Tunwattapanong, Abhijeet Ghosh, Paul Debevec. SIGGRAPH 2015 Talk.
- **Image-Based Relighting using Room Lighting Basis.** Antoine Toisoul, Abhijeet Ghosh. SIGGRAPH 2015 Poster.
- **Mobile Surface Reflectometry.** J  r  my Riviere, Pieter Peers, Abhijeet Ghosh. SIGGRAPH 2014 poster.
- **Rerendering Landscape Photographs.** Pu Wang, Diana Bicanzan, Abhijeet Ghosh. SIGGRAPH 2014 poster.
- **Polarized Light in Computer Graphics.** Alexander Wilkie, Andrea Weidlich, Abhijeet Ghosh. SIGGRAPH Asia 2012 Half-Day Course.
- **Measurement Based Synthesis of Facial Microgeometry.** Paul Graham, Borom Tunwattapanong, Jay Busch, Xueming Yu, Andrew Jones, Paul Debevec, Abhijeet Ghosh. SIGGRAPH 2012 Technical Talk and Poster.
- **Estimating Specular Normals from Spherical Stokes Reflectance Fields.** Giuseppe Claudio Guarnera, Pieter Peers, Paul Debevec, Abhijeet Ghosh. SIGGRAPH 2012 Technical Talk and Poster.
- **Estimating Diffusion Parameters from Polarized Spherical Gradient Illumination.** Yufeng Zhu, Pieter Peers, Paul Debevec, Abhijeet Ghosh. SIGGRAPH 2012 Technical Talk and Poster.
- **Facial Cartography: Interactive Scan Correspondance.** Cyrus A. Wilson, Oleg Alexander, Borom Tunwattapanong, Pieter Peers, Abhijeet Ghosh, Jay Busch, Arno Hartholdt, Paul Debevec. SIGGRAPH 2011 Technical Talk.
- **Free-form Polarized Spherical Illumination Reflectometry.** Kaori Kikuchi, Bruce Lamond, Abhijeet Ghosh, Pieter Peers, Paul Debevec. SIGGRAPH Asia 2010 Sketch.
- **Combining Spherical Harmonics and Point-Source Illumination for Efficient Image-Based Relighting.** Borom Tunwattapanong, Abhijeet Ghosh, Paul Debevec. SIGGRAPH 2010 Poster.
- **Data-Driven Diffuse-Specular Separation of Spherical Gradient Illumination.** Tongbo Chen, Abhijeet Ghosh, Paul Debevec. SIGGRAPH 2009 poster.
- **Estimating Specular Roughness from Polarized Second Order Spherical Gradient Illumination.** Abhijeet Ghosh, Pieter Peers, Cyrus A. Wilson, Paul Debevec. SIGGRAPH 2009 Technical Talk.
- **2D and 3D Facial Correspondences via Photometric Alignment.** Cyrus A. Wilson, Abhijeet Ghosh, Pieter Peers, Jen-Yuan Chiang, Jay Busch, Paul Debevec. SIGGRAPH 2009 Technical Talk.
- **Considering Shape Reconstruction from Specular Reflection.** Tomohito Masueda, Abhijeet Ghosh, Wanchun Ma, Hiroki Unten, Paul Debevec. SIGGRAPH Asia 2008 Technical Sketch.
- **Estimating Multi-layer Scattering in Faces using Direct-Indirect Separation.** Abhijeet Ghosh and Paul Debevec. SIGGRAPH 2008 Technical Talk.
- **Preference Galleries for Material Design.** Eric Brochu, Abhijeet Ghosh and Nando de Freitas. SIGGRAPH 2007 Poster (Winner of the ACM Student Research Competition).
- **The D-BRDF Model as a Basis for BRDF Acquisition.** Abhijeet Ghosh and Wolfgang Heidrich. SIGGRAPH 2007 Poster.
- **Sequential Sampling for Dynamic Environment Maps.** Abhijeet Ghosh, Arnaud Doucet, and Wolfgang Heidrich. SIGGRAPH 2006 Technical Sketch.
- **Correlated Visibility Sampling for Direct Illumination.** Abhijeet Ghosh and Wolfgang Heidrich. SIGGRAPH 2005 Technical Sketch.
- **Real Illumination from Virtual Environments.** Abhijeet Ghosh, Matthew Trentacoste, Helge Seetzen and Wolfgang Heidrich. SIGGRAPH 2005 Technical Sketch.
- **Bidirectional Importance Sampling for Illumination from Environment Maps.** David Burke, Abhijeet Ghosh and Wolfgang Heidrich. SIGGRAPH 2004 Technical Sketch.

TEACHING EXPERIENCE:

- **Instructor for Advanced Computer Graphics – Photographic Image Synthesis (COMP 70001) Spring 2013** - present, Imperial College London.

- Co-instructor for Computer Graphics – (COMP 60005) Spring 2022 - 2024, Imperial College London.
- Coordinator for Academic Writing in Computer Science (CO 520), Spring 2015 - 2016, Imperial College London.
- Co-Instructor for Advanced Computer Graphics – Photographic Image Synthesis (CS 599) (with Dr. Paul Debevec and Dr. Pieter Peers), Spring 2009 and Spring 2010, University of Southern California.
- Teaching Assistant for Computer Graphics (CPSC 314), Summer Session 1, 2006, University of British Columbia.
- Teaching Assistant for Algorithm Design and Analysis (CPSC 320), Winter Term 2, 2003-04, University of British Columbia.
- Teaching Assistant for Computer Graphics (CPSC 414), Winter Term 1, 2003-04, University of British Columbia.
- Teaching Assistant for Object Oriented Program Design (CSE 219), Spring 2003, Stony Brook University.

RESEARCH SUPERVISION:

PhD

- Emilie Nogue – Supervision of ongoing doctoral research at Imperial College, since Dec. 2020. Wave-optical imaging of shape and complex material reflectance.
- Arvin Lin – Supervision of ongoing doctoral research at Imperial College, since Jan. 2022. Combining imaging and neural rendering for 3D capture and relighting.
- Yiming Luo – Supervision of ongoing doctoral research at Imperial College, since Feb. 2023. Generative AI techniques 3D content creation and visualization.
- Adam Tlemsani – Co-supervision (with Prof. Daniel Elson) of ongoing doctoral research at Imperial College, since Oct. 2024. Computational imaging and AI techniques for surgical imaging.

PAST SUPERVISION:

Post-Doc

- Dr. Gilles Rainer – Supervision of postdoctoral researcher at Imperial College, July 2023 – Oct. 2024. Differentiable rendering and neural rendering for facial modeling and animation.
- Dr. Valentin Deschaintre – Supervision of postdoctoral researcher at Imperial College, Dec. 2019 – Mar. 2021. Combining imaging and deep learning for material appearance capture. (currently research scientist at Adobe Research)
- Dr. Daljit Singh Dhillon – Supervision of postdoctoral researcher at Imperial College, Nov. 2017 – Oct. 2018. Computational methods for wave optics effects in appearance. Dr Dhillon was previously a visiting SNSF fellow in the Realistic Graphics & Imaging group from March 2016 – Aug. 2017. (currently Assistant Professor at Clemson University)
- Dr. Ilya Reshetouski – Supervision of postdoctoral research at Imperial College, Mar. 2015 – Oct. 2016. Computational photography for shape and appearance acquisition. (Now at Sony R&D, Japan)
- Dr. Tongbo Chen – Co-supervision (with Dr. Paul Debevec) of post-doctoral research at USC-ICT, 2009-10. Spherical illumination reflectometry.

PhD

- Dr. Ekin Ozturk – Co-supervision (with UKAEA) of doctoral research at Imperial College, Oct. 2020 – Dec. 2024. Rendering and deep learning for imaging based diagnostics of MAST plasma.
- Dr. Xiaohui Li – Supervision of doctoral research at Imperial College, Oct. 2020 – Oct. 2024. Biophysical skin appearance modeling and generative skin ageing.
- Dr. Chongrui Fan – Supervision of doctoral research at Imperial College, Oct. 2020 – Oct. 2024. Practical acquisition of shape and reflectance using dual imaging.
- Dr. Alexandros Lattas - Co-supervision (with Prof. Stefanos Zafeiriou) of doctoral research at Imperial College, April 2019 – Sept. 2022. High-quality facial capture and deep-learning based face reconstruction. (currently at Google AR)
- Dr. Yuliya Gitlina – Supervision of doctoral research at Imperial College, Nov. 2017 – Oct. 2021. Practical multispectral appearance and illumination measurement and modelling.
- Dr. Yiming Lin – Supervision of doctoral research at Imperial College, Oct. 2016 – Oct. 2020. Example-based material appearance and shape modelling. (currently research engineering lead at Lumirithmic)
- Dr. Antoine Toisoul – Supervision of doctoral research at Imperial College, Oct. 2014 – Aug. 2019. Surface diffraction effects in material reflectance. (currently researcher at Facebook AI, London)
- Dr. Christos Kampouris – Co-supervision (with Dr. Stefanos Zafeiriou) of doctoral research at Imperial College, Oct. 2013 – June 2018. Acquisition and analysis of microgeometry and reflectance.

- Dr. Jaewon Kim – Supervision of doctoral research at Imperial College, Oct. 2015 – Aug. 2018. Polarized light field imaging and analysis (currently Vice-President of inspection at Samsung Display).
- Dr. Jérémy Riviere – Supervision of doctoral research at Imperial College, 2013 – 2017. On-site surface reflectometry. (Currently at Google AR)
- Dr. Paul Graham – Co-supervision (with Dr. Paul Debevec) of doctoral dissertation at USC-ICT, 2011-14. Synthesis of facial mesostructure and microgeometry.
- Dr. Borom Tunwattanapong – Co-supervision (with Dr. Paul Debevec) of doctoral dissertation at USC-ICT, 2010-14. Spherical harmonic and point illumination basis for reflectometry and image based relighting.
- Dr. Giuseppe Claudio Guarnera – Supervision of visiting doctoral student research, 2011-12, USC-ICT. Estimating surface normals from symmetric Stokes reflectance fields (currently Lecturer at Univ. of York).

MSc/MEng

- MSc project, summer 2022, Imperial – Kei Obi, Will Thomson.
- MEng projects, 2021 - 22, Imperial – Tristan Wride, Edward Parker, Jonathan Longman, Meera Nakrani, Sophie Thompson.
- MEng project supervision, 2020-21, Imperial College – Iulia Ivana, Tianyi Zou, Bianca-Alexandra Capasu (iPad Pro based facial capture), Zhiyuan Zhang (deep learning based material appearance estimation).
- MSc project supervision, summer 2020, Imperial College – Arvin Lin (photometric stereo and deep 3D reconstruction).
- MEng project supervision, 2019-20, Imperial College – Laurence Squires (Deep learning for aliasing in specular reflectance maps).
- MSc project supervision, summer 2019, Imperial College – Jie Huang, Xiohui Li, Yuan Zhu, Jichen Zhang, Xinda Wei.
- MSc project supervision, summer 2018, Imperial College – Mingqian Wang (Efficient facial capture using light stage), Xiaoqing Huang (multispectral imaging using lightstage).
- MEng project supervision, 2017-18, Imperial College – Mridul Kumar (High-resolution facial capture using lightstage).
- MSc project supervision, summer 2017, Imperial College – Alix Feniès (Image based lighting reproduction using multispectral light stage)
- MEng project supervision, 2016-17, Imperial College – Xingze Tian (AR Animation with Google Tango).
- MSc project supervision, summer 2016, Imperial College – Luca Filipi (Mobile polarization imaging reflectometry), Desy Kristianti (image manipulations with flash no-flash image pairs).
- MEng project supervision, 2015-16, Imperial College – Zuhayr Chagpar (3D reconstruction of the Queen's Tower), Edwin Kamulegeya (Mobile light field capture and display).
- MSc project supervision, summer 2015, Imperial College – Ye Yu (Priors for Image deblurring), Jean Melou (Mobile light probe capture), Daiwei Guo (Face as light probe), Qiu Sun (Fitting analytic sky models to probes).
- MSc project supervision, summer 2014, Imperial College – Antoine Toisoul (Image based relighting using office room lighting), Tereza Drskova (Interface for image based relighting and editing), Susanne Hallauer (Relighting face in a photograph with known illumination), Kaiyang Chen (Face as a light probe).
- MEng project supervision, 2013-14, Imperial College – James Webb (Structured procedural worlds, distinguished project), David Elsey (Virtual game world).
- MSc project supervision, summer 2013, Imperial College – Jérémy Riviere (Parallel image based lighting using OpenCL), Pu Wang and Diana Biczian (Rerendering landscape photographs), Ji Song (Global Illumination with Progressive Photon Mapping).
- Yufeng Zhu – Supervision of Masters directed research, 2011-12, USC-ICT. Real-time rendering with estimated layered subsurface scattering parameters.
- Kaori Kikuchi – Co-supervision (with Dr. Pieter Peers) of Master's thesis 2009-10, USC-ICT. Free-form polarized spherical illumination reflectometry.

BSc/BEng

- Christopher Conlan – Supervision of BEng project, Nov. 2017 – June 2018, Imperial College. Facial relighting using deep learning.
- Nandor Licker – Supervision of BEng project, Nov. 2015 – June 2016, Imperial College. Mobile augmented reality (best BEng project prize).
- Sabin Bhattarai – Supervision of BEng project, Nov. 2014 – June 2015, Imperial College. Programming of camera and controlled lighting systems for reflectance capture.
- Matthew O'Toole – Supervision of undergraduate honors thesis 2006-07, University of British Columbia. Real-time rendering of acquired BRDFs.

Interns/UROP

- Iulia Ivana - Supervision of 10 weeks UROP in summer of 2019, Imperial. Programming for multispectral Light Stage.
- Qingyue Yan and Kunal Katarya - Supervision of 10 weeks UROP in summer of 2018, Imperial. Programming for multispectral Light Stage.
- Husheng Deng - Supervision of 10 weeks UROP in summer of 2017, Imperial. Programming for multispectral Light Stage.
- Megan Lalla-Hamblin - Supervision of 10 weeks UROP in summer of 2013, Imperial. Reflectometry using Nvidia Tegra tablet.
- Pradeep Garigipati – Supervision of 3 month internship in summer 2012, USC-ICT. Analysis of spherical statistics of diffuse reflectance.
- Steven Breager – Supervision of 3 month internship in summer 2011, USC-ICT. Acquisition and analysis of higher order spherical statistics of material appearance.
- Jun Zheng – Supervision of 3 month internship in summer 2010, USC-ICT. Specular normal synthesis using stochastic super-resolution.
- Panagiota Stratou – Co-supervision (with Dr. Louis-Philippe Morency) of 3 month internship in summer 2009 and directed research in 2010, USC-ICT. Acquisition and relighting of facial expression and performance database.
- Tomohito Masueda – Co-supervision (with Dr. Paul Debevec) of 3 month internship in spring 2008, USC-ICT. Recovery of shape from specular reflection.

PhD EXAMINATION:

- Internal examiner for Imperial DOC PhD candidate Qiang Ma – December 2024.
- Internal examiner for Imperial DOC PhD candidate Dominik Kulon – October 2021.
- External examiner for Univ. of Surrey PhD candidate Gianmarco Addari – July 2021.
- Internal examiner for Imperial DOC PhD candidate Baris Gecer – October 2020.
- External examiner for INRIA PhD candidate Valentin Deschaintre – November 2019.
- External examiner for UCL CS EngD candidate David Walton – February 2019.
- Internal examiner for Imperial DOC PhD candidate Vanya Valindria – March 2019.
- Dr. James Booth (Imperial) – Internal examiner of PhD thesis on construction and application of 3D morphable model for in the wild facial modeling, 2018.
- Dr. Patrick Snape (Imperial) – Internal examiner of PhD thesis on 3D facial shape recovery, 2017.
- Dr. Jan Jachnik (Imperial) – Internal examiner of PhD thesis on light field and geometry acquisition, 2016.
- Dr. Katie Moore (College of William & Mary) – External examiner of PhD thesis on reflectance capture and editing techniques, 2016.
- Dr. Akis Tsotsios (Imperial) – Internal examiner of PhD thesis on under-water photometric stereo, 2015.
- Dr. Anustup Choudhury (USC) – Member of internal PhD advising and final examination committee on image enhancement techniques, 2010-12.
- Dr. Jun Zheng (UTEP) – External examiner of PhD thesis on stochastic super-resolution techniques, 2010.

PATENTS:

- **Acquisition of optical characteristics.** Abhijeet Ghosh, Gaurav Chawla, Yiming Lin, Jayanth Kannan, Ekin Ozturk. US Patent 12,288,375, Apr 29, 2025.
- **Appearance capture under ambient lighting conditions using a deep-learning neural network model.** Abhijeet Ghosh, Gaurav Chawla, Yiming Lin, Gilles Rainer, Lewis Bridgeman, Tristan Wride, Arvin Lin. US Patent 12,205,225, Jan 21, 2025.
- **Image capture and processing.** Abhijeet Ghosh, Yuliya Gitlina, Giuseppe Claudio Guarnera, Daljit Singh Dhillon. U.S. Patent No. 11530986, Dec 20, 2022.
- **Image processing for generating three-dimensional shape and spatially-varying reflectance of the object using a deep neural network.** Abhijeet Ghosh, Valentin Deschaintre, Yiming Lin. U.S. Patent No. 11410378, Aug 09, 2022.
- **Image processing for diffuse-specular separation.** Abhijeet Ghosh, Christos Kampouris, Alexandros Lattas, Stefanos Zafeiriou – U.S. Patent No. 10964099, March 30, 2021.
- **Specular object scanner for measuring reflectance properties of objects.** Paul Debevec, Xueming Yu, Graham Fyfe, Abhijeet Ghosh – U.S. Patent No. 9562857, February 7, 2017.
- **Multiview Face Capture using Polarized Spherical Gradient Illumination:** Paul Debevec, Abhijeet Ghosh, Graham Fyfe. U.S. Patent No. 9123116, September 1, 2015.

- **Illumination sphere with intelligent LED lighting units in scalable daisy chain with interchangeable filters:** Paul Debevec, Xueming Yu, Mark Bolas, Graham Fyffe, Jay Busch, Pieter Peers, Abhijeet Ghosh. U.S. Patent No. 8988599, March 24, 2015.
- **Apparatus and method for realistically expressing teeth:** Tae Hyun Rhee, Seon Min Rhee, Hyun Jung Shim, Do Kyoon Kim, Abhijeet Ghosh, Jay Busch, Matt Chiang, Paul Debevec. U.S. Patent No. 8976176, March 10, 2015.
- **Estimating spectral distribution of reflections from object surface based on low frequency illumination:** Paul E Debevec, Abhijeet Ghosh, Pieter Peers, Graham Fyffe. U.S. Patent No. 8300234, October 30, 2012.
- **Practical Modeling and Acquisition of Layered Facial Reflectance:** Paul E Debevec, Abhijeet Ghosh. U.S. Patent No. 8264490, September 11, 2012.

CONSULTING:

- Consultant on Facial Appearance Modelling, **Disney Research**, Zurich, 2016 - 2021.
- Consultant on Facial Appearance Modelling, **Facesoft Ltd**, London, 2018 - 2019.
- Consultant on Material Appearance Acquisition, **Foster + Partners**, London, 2015.
- Consultant on Facial Appearance Acquisition, **L'Oreal R&D**, Paris, 2014-15.
- Consultant on Light Stage based Facial Acquisition and Modeling, **Double Negative** visual effects, London, 2014.
- Consultant on Facial Reflectance Modeling for visual effects, **Jellyfish Pictures**, London, 2014.
- Consultant on Facial Reflectance Modeling for visual effects in **AVATAR**, **Weta Digital**, NZ, 2009.

KEYNOTE TALKS:

- **Computational imaging for realistic facial appearance capture.** BMVA Symposium on Digital Humans, May 2025.
- **Computational imaging for realistic computer graphics and beyond.** Inaugural lecture as Professor of Graphics & Imaging at Imperial College London, Dec. 2023.
- **Computational imaging for realistic appearance capture.** London Imaging Meeting 2023: Material Appearance.
- **Practical Spectral Imaging for Realistic Appearance Modeling.** Color and Visual Computing Symposium (CVCS), NTNU Norway, September 2020.
- **Computational Imaging for Realistic Appearance Modeling.** ACM SIGGRAPH European Conference on Visual Media Production (CVMP), December 2019.
- **Computational Imaging for Appearance and Shape Acquisition.** MUVAPP Workshop, NTNU Color and Visual Computing Lab, Gjøvik, Norway, June 2017.
- **Light Stage Based Acquisition of High Resolution Facial Geometry and Appearance.** Mosaic3DX 2013, Cambridge, Oct. 2013.

SERVICE / ESTEEM FACTORS:

- **Journal Editorial**
 - Associate Editor, ACM Transactions on Graphics (TOG), Dec. 2019 – Dec. 2022.
 - Associate Editor, IEEE Transactions on Visualization and Computer Graphics (TVCG), Jan. 2019 – Dec. 2022.
 - Invited co-editor, Computer Graphics Forum (special issue on EGSR), 41(4), 2022.
 - Invited co-editor, Computer Graphics Forum (special issue on Pacific Graphics), 37(7), 2018.
- **Advisory Board**
 - Facesoft Ltd, 2018 - 2020.
- **Conference Organization**
 - Conference co-chair, Eurographics Symposium on Rendering (EGSR) 2024, Imperial College London.
 - Program co-chair, Eurographics Symposium on Rendering (EGSR) 2022
 - Steering Committee, ACM SIGGRAPH Conference on Visual Media Production (since 2021)
 - Conference co-chair, Eurographics Symposium on Rendering (EGSR) 2020 (Online due to COVID19)
 - Program co-chair, Pacific Graphics 2018
 - Conference chair, ACM SIGGRAPH Conference on Visual Media Production (CVMP) 2018
 - Full Papers chair, CVMP 2017

- Organizer of Royal Society Research Fellow International Scientific Seminar (RFISS) on “Imaging in Graphics, Vision & Beyond”, 2016
 - Short papers chair, CVMP 2016
 - Workshop and Program co-chair, IEEE Procams 2011
- **Grants Funding Panel**
 - EPSRC ICT Prioritisation Panel, December 2016
 - US NSF IIS 10-571 Graphics & Visualization program, 2011
- **Senior Program Committee/Area Chair**
 - SIGGRAPH 2021
 - SIGGRAPH Asia 2017/2013-14
 - Eurographics 2021
 - EGSR 2025/2019/2014-16/2011-12
 - Pacific Graphics 2019/2013/2006.
 - Declined invitations – SIGGRAPH 2019/20/24, SIGGRAPH Asia 2016/18/25, Eurographics 2014/18/19/22.
- **Program Committee** – CAD/Graphics 2015, CVPR CCD 2012-15, IEEE Procams 2012, CVMP 2012-13, Eurographics STAR Reports 2015-17, SIGGRAPH Asia Sketches and Posters 2010-11, Eurographics Short papers 2011/2010/2008, 3D PVT 2010, Graphics Interface 2008.
- **Paper Session Chair** – SIGGRAPH 2021 (Appearance Capture and Perception), SIGGRAPH Asia 2017 (Reflectance & Scattering; High Performance Imaging), CVMP 2016 (Motion Capture), CVMP 2014 (Facial Capture), CVMP 2013 (Stereo and Hardware), SIGGRAPH Asia 2010 (Rendering), GI 2008 (Color and HDR).
- **External Reviewer (papers)** – SIGGRAPH 2004-25, SIGGRAPH Asia 2018-25/2015-16/2010-12, EG 2015-24/2013/2006-11, EGSR 2013/2006-10, ACM TOG, IEEE TVCG, Optics Express, IEEE PAMI, IEEE CG&A, JOSA, Computer Graphics Forum, IEEE TIP, ECCV 2012/2010, Pacific Graphics 2015/2012, GI 2009/2006, CGI 2006, I3D 03, VolVis-02, JGT, ACCV 2007, Computers&Graphics, IPSJ Trans. CVA, Computer Animation & Virtual Worlds.
- **External Reviewer (grants)** – EPSRC First Grant, 2015, EPSRC Fellowship 2018, NSERC grant 2022, ERC Advanced Grant 2023.
- **External Reviewer (courses)** – SIGGRAPH Asia 2008-09, Eurographics 2009.
- **Conference Tutorial** – SIGGRAPH 2017, BMVC 2016, SIGGRAPH Asia 2012.
- Departmental Management Committee – member, 2019 – 2022, Imperial.
- DOC Academic Hiring Committee – panel member, 2021 – present, Imperial.
- DOC Academic Promotions Panel – member, 2020 – present, Imperial.
- PhD mentor – mentor for cohort of PhD students, 2014-2019, Imperial.

INVITED TALKS:

- **Achieving Realism in Computer Graphics.** Imperial College DOC Public Lecture Series, April 2021.
- **Imaging Wave-effects in Material Appearance.** INRIA Sophia-Antipolis, November 2019.
- **Imaging and Learning for 3D Appearance Capture.** UK-Korea Workshop, Seoul National University, April 2019.
- **Computational Imaging for Realistic Appearance Modeling.** KAIST and Samsung Display, Seoul, Korea, April 2019.
- **Measurement Based Appearance Modeling for Realistic Computer Graphics** – Cambridge University, Computer Laboratory - Babbage Series Colloquium, Nov. 2018.
- **Computational Imaging for Appearance Modeling.** UCL Graphics and Vision group, Nov. 2016.
- **Measurement Based Appearance Modeling.** BMVC 2016 Conference Tutorial, York, September 2016.
- **Imaging Wave Effects in Appearance.** Royal Society International Scientific Seminar on “Imaging in Graphics, Vision & Beyond”, Chicheley Hall, May 2016.
- **Acquisition and Modeling of Facial and Material Appearance.** University of Bath Graphics and Vision group, Sept. 2013; Double Negative VFX R&D, Apr. 2014; University of Surrey CVSSP, June 2014; Univ. of York CS Dept. seminar, April 2015.
- **Light Stage Based Acquisition of High Resolution Facial Geometry and Appearance.** Imperial GaME 2013 event, May 2013; Loughborough University, Apr. 2014.

- **Measuring Facial Microgeometry and Subsurface Scattering using Polarized Spherical Gradient Illumination.** UCL Graphics group, April 2013.
- **Appearance Modeling for Realistic Computer Graphics** – Dept. of Computing, Imperial College London, Feb. 2011; CS Department, UC Santa Cruz, CA, June 2011; CS Department, College of William and Mary, VA, Sept. 2011.
- **Polarized Illumination Reflectometry** – Optical Society of Southern California, Playa Vista, CA, Nov. 2010.
- **Polarized Spherical Illumination Reflectometry** – University of British Columbia, Vancouver, BC, Aug. 2010.
- **Measurement and Modeling of Layered Facial Reflectance** – Avon Product R&D, Suffern, NY, Sept. 2009.
- **Measurement and Modeling of Material and Facial Reflectance** – Florida State University, Tallahassee, July 2009.
- **Practical Modeling and Acquisition of Facial Appearance and Performance** – Weta Digital, Wellington, New Zealand, June 2009.
- **Measurement, Modeling and Rendering for Realistic Computer Graphics** – CS Colloquium, University of Southern California, March 2009.
- **Measurement and Modeling of Material and Facial Reflectance** – Technische Universität Darmstadt, Germany, June 2008.
- **Realistic Materials and Illumination Environments** – USC Institute for Creative Technologies and Digital Domain Inc., Marina del Rey, CA, April 2007.
- **Sequential Sampling of Environment Maps** – INRIA Futurs, Bordeaux, France, July 2006.
- **High Dynamic Range Acquisition and Display** – UVP Biotech Imaging Systems, Upland, CA, August 2005.
- **Real Illumination from Virtual Environments** – Université de Montréal, July 2005; Bauhaus University at Weimar, Germany, July 2005.
- **Bidirectional Importance Sampling for Direct Illumination** - Bauhaus University at Weimar, July 2005.
- **Volume Rendering for High Dynamic Range Displays** – INRIA Futurs, Bordeaux, France, June 2004.

CONFERENCE TALKS:

- **Diffuse-Specular Separation using Binary Spherical Gradient Illumination.** EGSR '18, Karlsruhe, Germany, Jun. 2018.
- **Measurement Based Synthesis of Facial Microgeometry.** SIGGRAPH 2012, Technical Talk, Aug. 2012.
- **Estimating Specular Normals from Spherical Stokes Reflectance Fields.** SIGGRAPH 2012 Technical Talk, Aug. 2012.
- **Estimating Diffusion Parameters From Polarized Spherical Gradient Illumination.** SIGGRAPH 2012 Technical Talk, Aug. 2012.
- **Multiview Face Capture using Polarized Spherical Gradient Illumination.** SIGGRAPH Asia 2011, Hong Kong, Dec. 2011.
- **Circularly Polarized Spherical Illumination Reflectometry.** SIGGRAPH Asia 2010, Seoul, Dec. 2010.
- **Estimating Specular Roughness and Anisotropy from Second Order Spherical Gradient Illumination.** EGSR 2009, Girona, Spain, June 2009; SIGGRAPH 2009 Technical Talk, Aug. 2009.
- **Practical Modeling and Acquisition of Layered Facial Reflectance.** SIGGRAPH Asia 2008, Singapore, Dec. 2008.
- **Estimating Multi-layer Scattering in Faces using Direct-Indirect Separation.** SIGGRAPH 2008 Technical Talk, Aug. 2008.
- **BRDF Acquisition with Basis Illumination** – ICCV 2007 oral presentation, Rio de Janeiro, Brazil, October 2007.
- **Sequential Sampling of Environment Maps** – Eurographics Symposium on Rendering 2006, Nicosia, Cyprus, June 2006; SIGGRAPH 2006 Sketch talk, August 2006.
- **Correlated Visibility Sampling for Direct Illumination** – SIGGRAPH 2005 Sketch talk, August 2005; Pacific Graphics 2006, Taipei, Taiwan, October 2006.
- **Real Illumination from Virtual Environments** – Eurographics Symposium on Rendering 2005, Konstanz, Germany, July 2005.
- **Bidirectional Importance Sampling for Direct Illumination** – Eurographics Symposium on Rendering 2005, Konstanz, Germany, July 2005.
- **Volume Rendering for High Dynamic Range Displays** – Volume Graphics 05, Stony Brook, NY, June 2005.

PROFESSIONAL EXPERIENCE:

- Visiting researcher (May-June 2009), Weta Digital R&D. Hosted by Sebastian Sylwan.
- Research Internship (summer 2003), USC Institute for Creative Technologies. Supervised by Dr. Paul Debevec. Real-time rendering with high dynamic range lighting for Linear Light Source Reflectometry project.
- Research assistant (2000 - 03), Visualization Lab., Computer Science Department, Stony Brook University. Parallel volume rendering with special purpose hardware. Supervised by Prof. Arie Kaufman.
- Research apprenticeship (1999 - 00), ISRO Space Application Centre, Ahmedabad, India. Multispectral classification of remote sensing data using artificial neural networks. Supervised by Dr. A Senthil Kumar.

MEDIA COVERAGE:

- Interviewed on the Queen Elizabeth Prize for Engineering podcast [“The Future of Cameras”](#) – 2024.
- Lumirithmic facial capture featured on BBC Click – October 2022.
- [Lumirithmic coverage “AI takes the ‘real’ you into the metaverse” by Reuters](#) – September 2022.
- Quoted by CNN Business for article [“Here’s why you still look terrible in virtual reality”](#) – August 2022.
- [Work on skin microgeometry deformation featured by Imperial communication and covered by Gizmodo, FXguide](#) – August 20, 2015.
- [Work on skin reflectance covered in New Scientist, The Times, Daily Mail and Gizmodo](#) – April 2, 2013.
- [Imperial academic wins Royal Society Wolfson Research Merit Award](#) – Feb. 8, 2013.
- [KTLA features work on ICT Light Stage](#) – Nov. 28, 2012.
- [fxguide podcast features Abhijeet Ghosh's interview](#) – Sept. 17, 2012.
- [ICT researcher earns special effects credit in AVATAR](#) – Dec. 18, 2009.
- [ICT computer scientist wins Alain Fournier Award](#) – Apr. 29, 2008.