Chloe A. LeGendre

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EDUCATION

University of Southern California, Los Angeles, CA   **August 2015 -**
Ph.D., Computer Science (in progress)
GPA: 3.82

Stevens Institute of Technology, Hoboken, NJ   **September 2012 - May 2015**
M.S., Computer Science
GPA: 4.00

University of Pennsylvania, Philadelphia, PA   **September 2005 - May 2009**
B.S. in Engineering, Chemical and Biomolecular Engineering
GPA: 3.69

RESEARCH INTERESTS

Computational Photography, Appearance Capture, Color Imaging & Measurement, Computer Vision, 3D Reconstruction

RESEARCH EXPERIENCE

Graduate Research Assistant   **August 2015 - present**
Vision and Graphics Lab, USC Institute for Creative Technologies, Playa Vista, CA
- Advisor: Professor Paul Debevec
- Multispectral imaging, lighting reproduction, computational photography, appearance capture, spectroscopy.

Graduate Research Assistant   **January 2014 - July 2015**
Department of Computer Science, Stevens Institute of Technology, Hoboken, NJ
- Advisor: Associate Professor Philippos Mordohai
- 3D reconstruction, binocular and multiview stereo vision from video and high resolution images.

PUBLICATIONS

LeGendre, C., Yu, X., Liu, D., Busch, J., Jones, A., Pattanaik, S., and Debevec, P. 2016. Practical Multispectral Lighting Reproduction. ACM Transactions on Graphics (TOG), 35, 4 (July): 32 (SIGGRAPH 2016).

LeGendre C., Yu, X., and Debevec, P. 2016. Efficient Multispectral Reflectance Function Capture for Image-Based Relighting. In Proc. of IS&T Color Imaging Conference (CIC) 24, 2016.

LeGendre C., Yu, X., and Debevec, P. 2016. Optimal LED Selection for Multispectral Lighting Reproduction. In ACM SIGGRAPH 2016 Posters, ACM, SIGGRAPH 2016.

Holm, J., Maier, T., Debevec, P., **LeGendre, C.**, Pines, J., Erland, J., Joblove, G., Dyer, S., Sloan, B., di Gennaro, J., and Sherlock, D. 2016. A Cinematic Spectral Similarity Index. In Proc. of Annual Technical Conference & Exhibition, Society of Motion Picture and Television Engineers (SMPTE) 2016.

LeGendre C., Yu, X., and Debevec, P. 2017. Optimal LED Selection for Multispectral Lighting Reproduction. In Proc. of IS&T Electronic Imaging 2017 Material Appearance Conference. *[Best Student Paper Award]*

LeGendre C., Hyunh, L., Wang, S., and Debevec, P. 2017. Modeling Vellus Facial Hair from Asperity Scattering Silhouettes. SIGGRAPH 2017 Talks.

LeGendre C., Bastos, K., and Mordohai, P. 2017. High-Resolution Stereo Matching based on Sampled Photoconsistency Computation. British Machine Vision Conference 2017.

LeGendre C., Krissman, D., and Debevec, P. 2017. Improved Chromakey of Hair Strands via Orientation Filter Convolution. SIGGRAPH 2017 Posters. *[Winner, Graduate Category, ACM SIGGRAPH 2017 Student Research Competition]*

LeGendre C., Bladin, K., Kishore, B., Ren, X., Yu, X., and Debevec, P. 2018. Efficient Multispectral Facial Capture With Monochrome Cameras. In Proc. of IS&T Color Imaging Conference (CIC) 26, 2018. *[Accepted, to appear.]*

LeGendre C., Bladin, K., Kishore, B., Ren, X., Yu, X., and Debevec, P. 2018. Efficient Multispectral Facial Capture With Monochrome Cameras. In ACM SIGGRAPH 2018 Posters, ACM, SIGGRAPH 2018. *[Semi-finalist, Graduate Category, ACM SIGGRAPH 2018 Student Research Competition]*

Huang Z., Li, T., Chen, W., Zhao, Y., Xing, J., **LeGendre C.**, Luo, L., Ma, C., and Li, H. 2018. Deep Volumetric Video From Very Sparse Multi-View Performance Capture. European Conference on Computer Vision (ECCV) 2018. *[Accepted, to appear.]*

Bondi E., Craddock J., Funke R., **LeGendre C.**, and Tiwari V. 2018. Using Artificial Intelligence to Maximize the Spread of Sexual Health Information in a Multimodal Communication Network of Young Black Women. Conference of the Society for Social Work and Research (SSWR) 2018.

Bondi E., Craddock J., Funke R., **LeGendre C.**, and Tiwari V. 2018. Maximizing the spread of sexual health information in a multimodal communication network of young Black women using artificial intelligence. American Public Health Association Annual Meeting 2018. *[Accepted, to appear.]*

BOOK CHAPTER   Bondi E., Craddock J., Funke R., **LeGendre C.**, and Tiwari V. Maximizing the spread of sexual health information in a multimodal communication network of young black women. In *Artificial Intelligence for Social Welfare*, Cambridge University Press.

SERVICE   Reviewer:
ACM SIGGRAPH 2017
ACM Transactions on Graphics (TOG) 2017
IS&T Color Imaging Conference 2017, 2018.
Member:
Academy of Motion Picture Arts and Sciences - Science & Technology Council Committee on Solid State Lighting

TEACHING   CSCI 576 - Multimedia Systems Design (TA, Spring 2018, USC)
CSCI 420 - Computer Graphics (TA, Fall 2017, USC)
CBE 150 - Fundamentals of Biotechnology (TA, Fall 2006, UPenn)

HONORS AND
AWARDS   Annenberg Ph.D. Fellowship, University of Southern California (2015 - 2019).
Semi-finalist, Graduate Category, ACM SIGGRAPH Student Research Competition (2018).

Winner, Graduate Category, ACM SIGGRAPH Student Research Competition (2017).
Best Student Paper, IS&T Electronic Imaging Conference (2017).
Runner-up, Best Student Paper, IS&T Color Imaging Conference (2016).
USC Stevens Center for Innovation Commercialization Award (2017, 2018).
Computing Research Association CRA-W Grad Cohort - Travel Stipend (2017).
Dean's List, University of Pennsylvania (2007 - 2009).
Stuart W. Churchill Individual Research Prize for Undergraduate Research in Chemical Engineering, University of Pennsylvania (2009).

INVITED TALKS AND LECTURES

"Practical Multispectral Lighting Reproduction." Digital Domain, Los Angeles, CA. July 2016.

"Multispectral Lighting and Relighting." Imperial College, London, UK, Realistic Graphics and Imaging Group. September 2017.

"Global Illumination in Rendering." USC CSCI 420 Computer Graphics, guest lecture with Professor Hao Li. October 2017.

"Lighting Real and Virtual Humans." USC CSCI 576 Multimedia Systems Design, guest lecture with Professor Parag Havaldar. October 2017 and April 2018.

PATENTS AND APPLICATIONS

G. Balooch, **C. LeGendre**, W. Jung, R. Jung, W. Sloan, P. Patel, and A. Loudermilk. Systems and methods for measuring spectra of skin and other objects and materials and making predictions based thereon. US Patent 9,924,778. Granted 27 March 2018.

G. Balooch, **C. LeGendre**, A. Loudermilk, C. Luongo, P. Patel, W. Sloan. Systems and methods for measuring and categorizing colors and spectra of surfaces. Application No. WO 2015040110 A1. Filed 18 September 2014.

P. Debevec, **C. LeGendre**, S. Pattanaik. Multispectral Lighting Reproduction. Application No. US 15/582,522. Filed 28 April 2017.

VISUAL EFFECTS CREDITS

Bladerunner 2049 (2017)
Logan (2017)
Valerian and the City of a Thousand Planets (2017)

PROFESSIONAL EXPERIENCE

Google Daydream (VR/AR), Los Angeles, CA
Student Researcher - Augmented Reality   **Dec 2017 - present**
- Mobile augmented reality core technology development.
- Programming in Python (Tensorflow) and C++.

Software Engineering Intern   **June 2017 - August 2017**
- Mobile augmented reality core technology development for Google Pixel Phone's AR Stickers camera mode.
- Programming in Unity (C#), OpenGL/GLSL, and C++.

L'Oréal USA Research & Innovation, Clark, NJ
Senior Scientist I/II, Emerging Technologies   **May 2013 - June 2015**
- *Makeup Genius* augmented reality smartphone application that uses facial feature tracking to virtually apply cosmetic products in real time (9M downloads

globally).
- *Skintone Pro* low-cost spectrophotometer device with embedded learning algorithms for cosmetic product recommendations.

Scientist, Instrumentation and Imaging Laboratory   **September 2011 - April 2013**
- Clinical instrumentation and multimodal image capture and analysis methods to assess changes in skin conditions over time.

Johnson & Johnson Consumer Products Company, Skillman, NJ
Scientist I/II, R&D Leadership Program   **June 2009 - August 2011**
- Clinical instrumentation and imaging methods for skin health assessment.
- FIRST Robotics strategy mentor to FIRST team 75 (Hillsborough, NJ).

PROGRAMMING C++, OpenCV, Python, Tensorflow, MATLAB.

SOFTWARE NUKE, Maya (MEL and Python scripting), Arnold Renderer, Adobe Creative (Photoshop, Illustrator, Premier), Zync cloud renderer.

LANGUAGE English (native), French (proficient).

MEMBERSHIP ACM (2013 - present).
USC Chapter of the National Academy of Inventors (2017 - present).