Soham Uday Mehta

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EDUCATION

University of California, Berkeley (Fall 2011 – Spring 2015)
Ph.D. in Computer Science with Computer Graphics focus. GPA 3.86.
"Adaptive Sampling and Filtering for Interactive Physically-based Rendering"
Advisor: Prof. Ravi Ramamoorthi

Indian Institute of Technology, Bombay, India (Fall 2007 – Spring 2011)
B. Tech, Electrical Engineering with Minor in Computer Science. GPA 9.73.

EMPLOYMENT

Computational Imaging Research Scientist at Light Co (July 2015 – present)
Designing computational photography algorithms for novel multi-aperture camera.

PUBLICATIONS

Soham U. Mehta, Kihwan Kim, Dawid Pajak, Kari Pulli, Jan Kautz, Ravi Ramamoorthi. Filtering Environment Illumination for Interactive Physically-based Rendering in Mixed Reality. *In Proceedings of the Eurographics Symposium on Rendering (EGSR)*, 2015.

Soham U. Mehta, JiaXian Yao, Ravi Ramamoorthi and Fredo Durand. Factored Axis-Aligned Filtering for Rendering Multiple Distribution Effects. *In Proceedings of Siggraph*, 2014.

Soham U. Mehta, Brandon Wang, Ravi Ramamoorthi and Fredo Durand. Axis-Aligned Filtering for Physically-based Diffuse Indirect Lighting. *In Proceedings of Siggraph*, 2013.

Soham U. Mehta, Brandon Wang, and Ravi Ramamoorthi. Axis-Aligned Filtering for Interactive Sampled Soft Shadows. ACM ToG., 31(6), Nov 2012. *In Proceedings of Siggraph Asia*, 2012.

Soham U. Mehta, Ravi Ramamoorthi, Mark Meyer, and Christophe Hery. Analytic Tangent Irradiance Environment Maps for Anisotropic Surfaces. *In Proceedings of the Eurographics Symposium on Rendering (EGSR)*, 2012.

Ling-Qi Yan, **Soham U. Mehta**, Ravi Ramamoorthi and Fredo Durand. Fast 4D Sheared Filtering for Interactive Rendering of Distribution Effects. Technical Report, under review for ACM ToG, 2014.

HONORS

Awarded **NVIDIA Graduate fellowship** for 2014-15.

Awarded **EECS graduate fellowship** for 2011-12 academic year at UC, Berkeley.

Awarded **OP Jindal Engg. and Management Scholarship** (OPJEMS) 2009.

Secured **maximum GPA** in a class of 40 every academic year 2007-11 in B.Tech. at IIT-Bombay.

Gold Medalist at the 39th International Chemistry Olympiad 2007 (Moscow), participated in by 270 students from 68 countries. Represented India in a team of 4 students.

GRADUATE INTERNSHIPS

Mobile Visual Computing Team, Nvidia Corporation, Santa Clara. May-Dec 2014.
Developed a framework for physically-based rendering of mixed reality at interactive speeds on GPU.

Advanced Rendering Technology Team, Intel Corporation, San Francisco. May-July 2012.
Developed an algorithm to render filtered soft shadows using 4D stochastic rasterization on GPU.

UNDERGRADUATE INTERNSHIPS

Dept. Of Electrical Engineering, **EPFL**, Switzerland. May-July 2010.
Implemented a gait analysis algorithm to estimate gait keypoints and normality using wearable gyroscopes.

Dept. of Information Engineering, **Chinese University of Hong Kong**, HK. May-July 2009.
Developed a simulator for wireless P2P live streaming and compared efficiency of three streaming protocols.

TECHNICAL PROFICIENCY

C, C++, Matlab, Cuda, Android NDK, Java, HTML, Latex.

OpenGL, GLSL, DirectX (HLSL), NVIDIA Optix, PBRT.

GRADUATE COURSEWORK

Advanced Computer Graphics (mesh-simplification, animation, kinematics, image-based rendering)

Physically Based Animation (simulation of elastic and brittle materials, and fluids)

Computer Aided Geometric Design (splines, sweeps, subdivision, smooth surfaces)

Image Manipulation and Computational Photography (optics, light fields, HDR, graphcuts, warping)

Statistical Learning Theory (graphical models, sum-product, junction tree, hidden markov mod., EM)

Random Processes (Convergence, WSS proc., Wiener and Kalman filters, parameter estimation)

Digital Signal Processing (Multi-rate signal processing, spectral analysis, estimation, prediction)

Combinatorial Algorithms (routing, games, boosting, linear programming, perceptron, PCA)

Graduate Computer Architecture (RISC, pipelining, scheduling, branch prediction, shared memory, etc.)

TEACHING EXPERIENCE

GSI for **CS184** (Computer Graphics), Spring 2014.

GSI under-graduate courses in Linear Algebra and Differential Equations at IIT Bombay, Spring 2011.