

# Sameer Agarwal

Computer Science & Engineering  
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**Education** University of California, San Diego La Jolla, CA  
Ph.D. in Computer Science and Engineering, 2006.  
Dissertation: Learning from Higher Order Relations  
Advisor: Serge Belongie  
  
Indian Institute of Technology Kanpur, India  
Integrated MS in Mathematics and Scientific Computing, 2000.

## Research Experience

University of Washington Seattle, WA  
September 2006–  
Postdoctoral Research Associate, Department of Computer Science and Engineering.

University of California, San Diego La Jolla, CA  
September 2000–June, 2006  
Graduate Student Researcher, Department of Computer Science and Engineering.

Rhythm & Hues Studios Inc. Los Angeles, CA  
July 2003–September 2003  
Summer Intern, Rendering Group.

Matsushita Electrical Industrial Co. Osaka, Japan  
July 2000–September 2000  
Visiting Student Researcher, Advanced Technology Research Laboratories.

Washington State University Pullman, WA  
May 1998–July 1998  
Visiting Researcher, Department of Electrical Engineering and Computer Science.

Indian Institute of Technology Kanpur, India  
August 1997–June 2000  
Undergraduate Researcher, Department of Mechanical Engineering.

## Teaching Experience

University of Washington  
CSE558, *Convex Optimization and Applications*, Spring 2007: Instructor

Seattle, WA

University of California, San Diego  
CSE166, *Image Processing*, Fall 2004: Teaching Assistant.  
CSE166, *Image Processing*, Fall 2003: Teaching Assistant.  
CSE150, *Programming Languages for Artificial Intelligence*, Winter 2001:  
Teaching Assistant  
CSE51, *Introduction to Computer Programming*, Fall 2000: Teaching Assistant

La Jolla, CA

**Honors** David Marr Prize Honorable Mention for “Globally Convergent Algorithms for Affine and Metric Upgrades in Stratified Autocalibration”, International Conference on Computer Vision, 2007.

Best Poster Award for “Quantitative Spectral Decomposition for Stained Tissue Analysis”, UCSD Research Review, 2005.

Best Poster Award for “On Refractive Optical Flow” , UCSD Research Review, 2004

Co-author of *Fast Breaking Paper* , “A Fast and Elitist Multi-objective Genetic Algorithm: NSGA-II”, 2004.

U.C. San Diego Woolley Fellowship, 2001.

## Press Coverage

“Structured Importance Sampling of Environment Maps”, *Full Digital Innovation*, September 2003.

## Professional Activities

Reviewer: IEEE Transactions on Pattern Analysis and Machine Intelligence, SIGGRAPH, Journal of Machine Learning Research, IEEE Conference on Computer Vision and Pattern Recognition, International Conference on Computer Vision, European Conference on Computer Vision, Eurographics, Artificial Intelligence and Statistics, IEEE Transactions on Knowledge and Data Engineering, Graphics Interface, International Conference on Machine Learning, Parallel Problem Solving from Nature

## Journal Articles

F. Kahl, S. Agarwal, M. K. Chandraker, D. Kriegman and S. Belongie “Practical Global Optimization for Multiview Geometry”, *International Journal of Computer Vision*, accepted.

J. Wills, S. Agarwal and S. Belongie, “A Feature-based Approach for Dense Segmentation and Estimation of Large Disparity Motion,” *International Journal of Computer Vision*, **68**(2):125–143, June 2006.

S. Agarwal, R. Ramamoorthi, S. Belongie and H.W. Jensen, “Structured Importance Sampling of Environment Maps,” *ACM Transactions on Graphics – Proceedings of SIGGRAPH*, **22**(3):605-612, July 2003.

K. Deb, A.P. Mathur, S. Agarwal and T. Meyrivan, “A Fast and Elitist Multi-objective Genetic Algorithm: NSGA-II,” *IEEE Transactions on Evolutionary Computation*, **6**(2):182-197, April 2002.

## Refereed Conference Papers

S. Agarwal, N. Snavely, S. Seitz, “Fast Algorithms for  $L_\infty$  Optimization Problems in Multiple View Geometry”, *IEEE Conference on Computer Vision & Pattern Recognition*, 2008.

M. Chandraker, S. Agarwal, D. Kriegman, S. Belongie, “Globally Convergent Algorithms for Affine and Metric Upgrades in Stratified Autocalibration”, *IEEE International Conference on Computer Vision*, 2007.

T. S. Saponas, J. Lester, C. Hartung, S. Agarwal and T. Kohno, “Devices That Tell On You: Privacy Trends in Consumer Ubiquitous Computing”, *USENIX Security*, 2007.

M. Chandraker, S. Agarwal, F. Kahl, D. Kriegman, “Autocalibration via Rank-Constrained Estimation of the Absolute Quadric”, *IEEE Conference on Computer Vision and Pattern Recognition*, 2007.

M. Chandraker, S. Agarwal, D. Kriegman, “Shadowcuts: Photometric stereo with shadows”, *IEEE Conference on Computer Vision and Pattern Recognition*, 2007.

S. Agarwal, J. Wills, L. Cayton, G. Lanckriet, D. Kriegman and S. Belongie, “Generalized Non-metric Multidimensional Scaling”, *AISTATS*, 2007.

S. P. Mallick, S. Agarwal, D. Kriegman, S. Belongie, B. Carragher, C. Potter, “Vision in the Small: Reconstructing the Structure of Protein Macromolecules from Cryo-Electron Micrographs”, *Proceedings of the British Machine Vision Conference*, Volume I, pp. 1–6, September 2006, Edinburgh, United Kingdom.

S. Agarwal, K. Branson, S. Belongie, “Higher Order Learning with Graphs”, *Proceedings of the International Conference on Machine Learning*, pp. 17–24, 2006.

S. P. Mallick, S. Agarwal, D. Kriegman, S. Belongie, B. Carragher, C. Potter, “Structure and View Estimation for Tomographic Reconstruction: A Bayesian Approach”, *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition*, pp. 2253–2260, 2006.

S. Agarwal, M. Chandraker, F. Kahl, D. Kriegman and S. Belongie, “Practical Global Optimization for Multiview Geometry”, *Proceedings of the European Conference on Computer Vision*, 2006.

S. Agarwal, J. Lim, L. Zelnik-Manor, P. Perona, D. Kriegman and S. Belongie, “Beyond Pairwise Clustering,” *Proceedings of the IEEE Computer Vision and Pattern Recognition*, 2005, pp. 838-845.

S. Agarwal, S. P. Mallick, D. Kriegman and S. Belongie, “On Refractive Optical Flow,” *Proceedings of the European Conference on Computer Vision*, 2004, pp. 483-494, vol. 2.

A. Rabinovich, S. Agarwal, C. Laris, J. Price, and S. Belongie “Unsupervised Color Decomposition of Histologically Stained Tissue Samples” *Neural Information Processing Systems*, 2003.

J. Wills, S. Agarwal and S. Belongie, “What Went Where,” *IEEE Conference on Computer Vision and Pattern Recognition*, 2003, pp. 37-44, vol. 1.

S. Agarwal and S. Belongie, “On the Non-Optimality of Four Color Coding of Image Partitions,” *International Conference on Image Processing*, 2002, pp. 677-680, vol. 2.

K. Morikawa, S. Agarwal, C. Elkan and G. Cottrell, “A Taxonomy of Computational and Social Learning”, *Workshop on Developmental Embodied Cognition*, 2001.

K. Deb, S. Agarwal A.P. Mathur and T. Meyrivan, “A Fast and Elitist Multi-objective Genetic Algorithm: NSGA-II,” *Proceedings of the Parallel Problem Solving from Nature IV Conference*, 2000.

K. Deb and S. Agarwal, “Understanding Interactions Between Genetic Algorithm Parameters,” *Foundations of Genetic Algorithms*, 1999.

K. Deb and S. Agarwal, “A Niche-penalty Approach for Constraint Handling in Genetic Algorithms,” *Proceedings of the International Conference on Artificial Neural Networks and Genetic Algorithms*, 1999.

## **Book Chapters**

H. Kargupta, E.R. Sanseverino, E. Johnson and S. Agarwal, “The Genetic Algorithm, Linkage Learning and Scalable Data Mining”, *Intelligent Data Analysis in Science*, Hugh Cartwright, editor, Oxford University Press, 2000.

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