

Sameer Agarwal
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Education University of California, San Diego La Jolla, CA
2000–2006
Ph.D. in Computer Science and Engineering.
Dissertation: Learning from Higher Order Relations.
Advisor: Serge Belongie

Indian Institute of Technology Kanpur, India
1995–2000
M.Sc. in Mathematics and Scientific Computing.

Work Experience

University of Washington Seattle, WA
June 2011–
Affiliate Professor, Department of Computer Science and Engineering.

Google Inc. Seattle, WA
January 2010–
Software Engineer

University of Washington Seattle, WA
September 2009–December 2009
Acting Assistant Professor, Department of Computer Science and Engineering.

University of Washington Seattle, WA
September 2006–August 2009
Postdoctoral Research Associate, 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.

Teaching Experience

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

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**
- PAMI Mark Everingham Prize for **Ceres Solver**, IEEE International Conference on Computer Vision, 2023.
 - Outstanding Reviewer, IEEE Conference on Computer Vision and Pattern Recognition, 2021.
 - PAMI Helmholtz Prize for **Building Rome in a Day**, IEEE International Conference on Computer Vision, 2019.
 - Outstanding Reviewer, IEEE Conference on Computer Vision and Pattern Recognition, 2012.
 - David Marr Prize Honorable Mention for **Globally Convergent Algorithms for Affine and Metric Upgrades in Stratified Autocalibration**, IEEE International Conference on Computer Vision, 2007.
 - Fast Breaking Paper, **A Fast and Elitist Multi-objective Genetic Algorithm: NSGA-II**, 2004.
 - U.C. San Diego Woolley Fellowship, 2001.

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

Area Chair: IEEE Conference on Computer Vision and Pattern Recognition 2013, European Conference on Computer Vision 2014, IEEE International Conference on Computer Vision, 2015, IEEE Conference on Computer Vision & Pattern Recognition, 2018.

Journal Articles

- S. Agarwal, T. Duff, M. Lieblich and R. R. Thomas, **An Atlas for the Pinhole Camera**, *Foundations of Computational Mathematics*, 2022.
- S. Agarwal, A. Pryhuber, R. Sinn and R. Thomas, **The Chiral Domain of a Camera Arrangement**, *Journal of Mathematical Imaging and Vision*, 2022.
- D. Cifuentes, S. Agarwal, P. A. Parillo and R. Thomas, **On the Local Stability of Semidefinite Relaxations**, *Mathematical Programming*, 2022.

- S. Agarwal, A. Pyrhuber and R. Thomas, **Ideals of the Multiview Variety**, *IEEE Transactions on Pattern Analysis & Machine Intelligence*, 2019.
- S. Agarwal, H. Lee, B. Sturmfels and R. Thomas, **On the Existence of Epipolar Matrices**, *International Journal of Computer Vision*, **121**(3):403–415, 2017.
- R. Anderson, D. Gallup, J. T. Barron, J. Kontkanen, N. Snavely, C. Hernandez Esteban, S. Agarwal and S. M. Seitz, **Jump: Virtual Reality Video**, *ACM Transactions on Graphics*, **35**(6), 2016.
- S. Agarwal, Y. Furukawa, N. Snavely, I. Simon, B. Curless, S. Seitz, R. Szeliski, **Building Rome in a Day**, *Communications of the ACM*, **54**(10):105–112, 2011.
- M. Chandraker, S. Agarwal, D. Kriegman, S. Belongie **Globally Optimal Algorithms for Stratified Autocalibration**, *International Journal of Computer Vision*, **90**(2):236–254, 2010.
- J. Wills, S. Agarwal, D. Kriegman & S. Belongie **Towards a Perceptual Space for Gloss**, *ACM Transactions on Graphics*, **28**(4):1–15, 2009.
- F. Kahl, S. Agarwal, M. K. Chandraker, D. Kriegman & S. Belongie **Practical Global Optimization for Multiview Geometry**, *International Journal of Computer Vision*, **79**(3):271–284, 2008.
- J. Wills, S. Agarwal & S. Belongie, **A Feature-based Approach for Dense Segmentation and Estimation of Large Disparity Motion**, *International Journal of Computer Vision*, **68**(2):125–143, 2006.
- S. Agarwal, R. Ramamoorthi, S. Belongie & H.W. Jensen, **Structured Importance Sampling of Environment Maps**, *ACM Transactions on Graphics*, **22**(3):605–612, 2003.
- K. Deb, A.P. Mathur, S. Agarwal & T. Meyrivan, **A Fast and Elitist Multi-objective Genetic Algorithm: NSGA-II**, *IEEE Transactions on Evolutionary Computation*, **6**(2):182–197, 2002.

Refereed Conference Papers

- A. Fix & S. Agarwal, **Duality and the Continuous Graphical Model**, *European Conference on Computer Vision*, 2014.
- C. Aholt, S. Agarwal & R. Thomas, **A QCQP Approach to Triangulation**, *European Conference on Computer Vision*, 2012.
- A. Kushal & S. Agarwal, **Visibility Based Preconditioning For Bundle Adjustment**, *IEEE Conference on Computer Vision & Pattern Recognition*, 2012.
- Q. Shan, S. Agarwal & B. Curless, **Refractive Height Fields from Single and Multiple Images**, *IEEE Conference on Computer Vision & Pattern Recognition*, 2012.

- C. Wu, S. Agarwal, B. Curless, S. M. Seitz, **Schematic Surface Reconstruction**, *IEEE Conference on Computer Vision & Pattern Recognition*, 2012.
- C. Wu, S. Agarwal, S. Seitz & B. Curless, **Multicore Bundle Adjustment**, *IEEE Conference on Computer Vision & Pattern Recognition*, 2011.
- S. Agarwal, N. Snavely, S. Seitz & R. Szeliski, **Bundle Adjustment in the Large**, *European Conference on Computer Vision*, 2010.
- S. Agarwal, N. Snavely, I. Simon, S. Seitz & R. Szeliski, **Building Rome in a Day**, *IEEE International Conference on Computer Vision*, 2009.
- S. Agarwal, N. Snavely, S. Seitz, **Fast Algorithms for L_∞ 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 & T. Kohno, **Devices That Tell On You: Privacy Trends in Consumer Ubiquitous Computing**, *USENIX Security Symposium*, 2007.
- M. Chandraker, S. Agarwal, F. Kahl, D. Kriegman, **Autocalibration via Rank-Constrained Estimation of the Absolute Quadric**, *IEEE Conference on Computer Vision & Pattern Recognition*, 2007.
- M. Chandraker, S. Agarwal, D. Kriegman, **Shadowcuts: Photometric Stereo With Shadows**, *IEEE Conference on Computer Vision & Pattern Recognition*, 2007.
- S. Agarwal, J. Wills, L. Cayton, G. Lanckriet, D. Kriegman & 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**, *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**, *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**, *IEEE Conference on Computer Vision & Pattern Recognition*, pp. 2253–2260, 2006.
- S. Agarwal, M. Chandraker, F. Kahl, D. Kriegman & S. Belongie, **Practical Global Optimization for Multiview Geometry**, *European Conference on Computer Vision*, 2006.

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

S. Agarwal, S. P. Mallick, D. Kriegman & S. Belongie, **On Refractive Optical Flow**, *European Conference on Computer Vision*, 2004, pp. 483-494, vol. 2.

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

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

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

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

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

K. Deb & S. Agarwal, **A Niche-penalty Approach for Constraint Handling in Genetic Algorithms**, *International Conference on Artificial Neural Networks & Genetic Algorithms*, 1999.

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

Book Chapters

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

Unrefereed Articles

S. Agarwal, Y. Furukawa, N. Snavely, I. Simon, B. Curless, S. Seitz, R. Szeliski, **Reconstructing Rome**, *IEEE Computer*, June, 2010.

Last update: October 23, 2023