Niloy J. Mitra

Professor
University College London
Department of Computer Science,
Room 5.08,
66-72 Gower Street,
London, UK WC1E 6BT.

Phone: +44 (0)20 3108 7115
Fax: +44 (0)20 7387 1397
Email: n.mitra@cs.ucl.ac.uk
Homepage: http://www.cs.ucl.ac.uk/staff/n.mitra/

1 Education

Ph.D. Electrical Engineering, Stanford University, 2006 (advisor: Prof. Leo Guibas)

M.S. Electrical Engineering, Stanford University, 2002

B.S. Electronics and Communication Engineering, IIT Kharagpur, 1999 (advisor: Prof. Prabir Biswas)

2 Employment

Professor, University College London, Oct. 2014–present

Reader (Associate Professor), University College London, Oct. 2011–Sept. 2014

Visiting Professor, KAUST, since Sept. 2013

Senior Lecturer, University College London, Aug. 2011–Sept. 2012

Associate Professor, KAUST, 2011

Guest Professor, TU Vienna, 2009–2011

Assistant Professor, KAUST, 2009–2011

Assistant Professor, IIT Delhi, 2007–2009

Postdoctoral Scholar, TU Vienna, 2006-2007 (mentor: Prof. Helmut Pottmann)

3 Publications

3.1 Refereed Journals

[Averkiou et al.(2015)Averkiou, Kim, and Mitra] Averkiou, M., Kim, V.G., and Mitra, N.J. (2015). Autocorrelation descriptor for efficient co-alignment of 3d shape collections. *Computer Graphics Forum*.

[Hennessey and Mitra(2015)] Hennessey, J.W. and Mitra, N.J. (2015). An image degradation model for depth-augmented image editing. *Symposium on Geometry Processing 2015*.

[Hueting et al.(2015)Hueting, Ovsjanikov, and Mitra] Hueting, M., Ovsjanikov, M., and Mitra, N. (2015). Crosslink: Joint understanding of image and 3d model collections through shape and camera pose variations. *ACM SIGGRAPH Asia 2015*.

[Liu et al.(2015)Liu, Vimont, Wand, Cani, Hahmann, Rohmer, and Mitra] Liu, H., Vimont, U., Wand, M., Cani, M.P., Hahmann, S., Rohmer, D., and Mitra, N.J. (2015). Replaceable substructures for efficient part-based modeling. *Computer Graphics Forum (Special issue of Eurographics 2015)*.

[Monszpart et al.(2015)Monszpart, Mellado, Brostow, and Mitra] Monszpart, A., Mellado, N., Brostow, G., and Mitra, N. (2015). RAPter: Rebuilding man-made scenes with regular arrangements of planes. *ACM SIGGRAPH 2015*.

[Umetani et al.(2015)Umetani, Igarashi, and Mitra] Umetani, N., Igarashi, T., and Mitra, N.J. (2015). Guided exploration of physically valid shapes for furniture design. *Communication of ACM (Research Highlight)*, 58(10).

[Wong et al.(2015)Wong, Chu, and Mitra] Wong, Y.S., Chu, H.K., and Mitra, N.J. (2015). Smartannotator an interactive tool for annotating indoor rgbd images. *Computer Graphics Forum (Special issue of Eurographics 2015)*.

[Yang et al.(2015)Yang, Wang, and Mitra] Yang, Y.L., Wang, J., and Mitra, N.J. (2015). Reforming shapes for material-aware fabrication. *Symposium on Geometry Processing 2015*.

[Zheng et al.(2015)Zheng, Liu, Dorsey, and Mitra] Zheng, Y., Liu, H., Dorsey, J., and Mitra, N.J. (2015). Ergonomics-inspired reshaping and exploration of collections of models. *IEEE TRANSACTIONS ON VISUALIZATION AND COMPUTER GRAPHICS*.

[AlHalawani et al.(2014)AlHalawani, Yang, Wonka, and Mitra] AlHalawani, S., Yang, Y.L., Wonka, P., and Mitra, N.J. (2014). What makes london work like london? *Computer Graphics Forum (Proceedings of SGP 2014)*, 33.

[Averkiou et al.(2014)Averkiou, Kim, Zheng, and Mitra] Averkiou, M., Kim, V., Zheng, Y., and Mitra, N.J. (2014). Shapesynth: Parameterizing model collections for coupled shape exploration and synthesis. *Computer Graphics Forum (Special issue of Eurographics 2014)*.

[Ceylan et al.(2014)Ceylan, Mitra, Zheng, and Pauly] Ceylan, D., Mitra, N.J., Zheng, Y., and Pauly, M. (2014). Coupled structure-from-motion and 3d symmetry detection for urban facades. *ACM Transactions on Graphics*.

[Dobos et al.(2014)Dobos, Mitra, and Steed] Dobos, J., Mitra, N.J., and Steed, A. (2014). 3d timeline: Reverse engineering of a part-based provenance from consecutive 3d models. *Computer Graphics Forum (Special issue of Eurographics 2014)*.

[Fish* et al.(2014)Fish*, Averkiou*, van Kaick, Sorkine-Hornung, Cohen-Or, and Mitra] Fish*, N., Averkiou*, M., van Kaick, O., Sorkine-Hornung, O., Cohen-Or, D., and Mitra, N.J. (2014). Meta-representation of shape families. *ACM Transactions on Graphics (Proc. SIGGRAPH)*. * joint first authors.

[Huang et al.(2014)Huang, Guibas, and Mitra] Huang, Q., Guibas, L., and Mitra, N.J. (2014). Near-regular structure discovery using linear programming. *ACM Transactions on Graphics*.

[Koo et al.(2014)Koo, Li, Yao, Agrawala, and Mitra] Koo, B., Li, W., Yao, J., Agrawala, M., and Mitra, N.J. (2014). Creating works-like prototypes of mechanical objects. *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*.

[Liu et al.(2014)Liu, Chaudhuri, Kim, Huang, Mitra, and Funkhouser] Liu, T., Chaudhuri, S., Kim, V., Huang, Q.X., Mitra, N.J., and Funkhouser, T. (2014). Creating consistent scene graphs using a probabilistic grammar. *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*.

[Mellado et al.(2014)Mellado, Aiger, and Mitra] Mellado, N., Aiger, D., and Mitra, N.J. (2014). Super4pcs: Fast global pointcloud registration via smart indexing. *Computer Graphics Forum (Proceedings of SGP 2014)*, 33.

[Shao* et al.(2014)Shao*, Monszpart*, Zheng, Koo, Xu, Zhou, and Mitra] Shao*, T., Monszpart*, A., Zheng, Y., Koo, B., Xu, W., Zhou, K., and Mitra, N.J. (2014). Imagining the unseen: Stability-based cuboid arrangements for scene understanding. *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*. * joint first authors.

[Zheng et al.(2014)Zheng, Cohen-Or, Averkiou, and Mitra] Zheng, Y., Cohen-Or, D., Averkiou, M., and Mitra, N.J. (2014). Recurring part arrangements in shape collections. *Computer Graphics Forum (Special issue of Eurographics 2014)*.

[AlHalawani et al.(2013)AlHalawani, Yang, Liu, and Mitra] AlHalawani, S., Yang, Y.L., Liu, H., and Mitra, N.J. (2013). Interactive facades: Analysis and synthesis of semi-regular facades. *Computer Graphics Forum (EUROGRAPHICS)*, 32(2pt2):215–224.

[Bao et al.(2013)Bao, Yan, Mitra, and Wonka] Bao, F., Yan, D.M., Mitra, N.J., and Wonka, P. (2013). Generating and exploring good building layouts. *ACM Transactions on Graphics (Proc. SIGGRAPH)*, 32(4).

[Ceylan et al.(2013)Ceylan, Li, Mitra, Agrawala, and Pauly] Ceylan, D., Li, W., Mitra, N.J., Agrawala, M., and Pauly, M. (2013). Designing and fabricating mechanical automata from mocap sequences. *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*. To appear.

[Cheng et al.(2013)Cheng, Mitra, Huang, and Hu] Cheng, M.M., Mitra, N.J., Huang, X., and Hu, S.M. (2013). Salientshape: Group saliency in image collections. *The Visual Computer*.

[Chu et al.(2013)Chu, Chang, Lee, and Mitra] Chu, H.K., Chang, C.S., Lee, R.R., and Mitra, N.J. (2013). Halftone QR codes. *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*. To appear.

[Kim et al.(2013a)Kim, Li, Mitra, Chaudhuri, DiVerdi, and Funkhouser] Kim, V.G., Li, W., Mitra, N.J., Chaudhuri, S., DiVerdi, S., and Funkhouser, T. (2013). Learning part-based templates from large collections of 3d shapes. *ACM Transactions on Graphics (Proc. SIGGRAPH)*, 32(4).

[Kim et al.(2013b)Kim, Mitra, Huang, and Guibas] Kim, Y.M., Mitra, N.J., Huang, Q., and Guibas, L. (2013). Guided real-time scanning of indoor objects. *Computer Graphics Forum*. Proc. Pacific Graphics.

[Li et al.(2013)Li, Fan, Mitra, Chamovitz, Cohen-Or, and Chen] Li, Y., Fan, X., Mitra, N.J., Chamovitz, D., Cohen-Or, D., and Chen, B. (2013). Analyzing growing plants from 4D point cloud data. *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*. To appear.

[Liu et al.(2013)Liu, Yang, AlHalawani, and Mitra] Liu, H., Yang, Y.L., AlHalawani, S., and Mitra, N.J. (2013). Constraint-aware interior layout exploration for precast concrete-based buildings. *The Visual Computer (CGI Special Issue)*.

[McCrae et al.(2013)McCrae, Mitra, and Singh] McCrae, J., Mitra, N.J., and Singh, K. (2013). Surface perception of planar abstractions. *ACM Transactions on Applied Perception*. Invited article from ACM SAP 2013.

[Mitra et al.(2013a)Mitra, Pauly, Wand, and Ceylan] Mitra, N.J., Pauly, M., Wand, M., and Ceylan, D. (2013). Symmetry in 3d geometry: Extraction and applications. *Computer Graphics Forum*.

[Mitra et al.(2013b)Mitra, Yang, Yan, Li, and Agrawala] Mitra, N.J., Yang, Y.L., Yan, D.M., Li, W., and Agrawala, M. (2013). Illustrating how mechanical assemblies work. *Communications of ACM CACM Research Highlight*.

[Shao et al.(2013)Shao, Li, Zhou, Xu, Guo, and Mitra] Shao, T., Li, W., Zhou, K., Xu, W., Guo, B., and Mitra, N.J. (2013). Interpreting concept sketches. *ACM Transactions on Graphics (Proc. SIGGRAPH)*, 32(4).

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[Aiger et al.(2012)Aiger, Cohen-Or, and Mitra] Aiger, D., Cohen-Or, D., and Mitra, N.J. (2012). Repetition maximization based texture rectification. *Computer Graphics Forum (EUROGRAPHICS)*.

[Ceylan et al.(2012)Ceylan, Mitra, Li, Weise, and Pauly] Ceylan, D., Mitra, N.J., Li, H., Weise, T., and Pauly, M. (2012). Factored facade acquisition using symmetric line arrangements. *Computer Graphics Forum (EUROGRAPHICS)*.

[Kim et al.(2012a)Kim, Li, Mitra, DiVerdi, and Funkhouser] Kim, V.G., Li, W., Mitra, N.J., DiVerdi, S., and Funkhouser, T. (2012). Exploring collections of 3d models using fuzzy correspondences. *ACM Transactions on Graphics (Proc. SIGGRAPH)*, 31(4).

[Kim et al.(2012b)Kim, Mitra, Yan, and Guibas] Kim, Y.M., Mitra, N.J., Yan, D.M., and Guibas, L. (2012). Acquiring 3d indoor environments with variability and repetition. *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*, 31(6).

[Mitra et al.(2012)Mitra, Pauly, Wand, and Ceylan] Mitra, N.J., Pauly, M., Wand, M., and Ceylan, D. (2012). Symmetry in 3d geometry: Extraction and applications. *State-of-the-art Report (STAR) EUROGRAPHICS*.

[Umetani et al.(2012)Umetani, Igarashi, and Mitra] Umetani, N., Igarashi, T., and Mitra, N.J. (2012). Guided exploration of physically valid shapes for furniture design. *ACM Transactions on Graphics (Proc. SIGGRAPH)*, 31(4).

[Zheng et al.(2012)Zheng, Chen, Cheng, Zhou, Hu, and Mitra] Zheng, Y., Chen, X., Cheng, M.M., Zhou, K., Hu, S.M., and Mitra, N.J. (2012). Interactive images: Proxy-based scene understanding for smart manipulation. *ACM Transactions on Graphics (Proc. SIGGRAPH)*, 31(4).

[Berner et al.(2011)Berner, Wand, Mitra, Mewes, and Seidel] Berner, A., Wand, M., Mitra, N.J., Mewes, D., and Seidel, H.P. (2011). Shape analysis with subspace symmetries. *Computer Graphics Forum (EUROGRAPHICS)*, 30(2).

[Fu et al.(2011)Fu, Zhjou, Liu, and Mitra] Fu, H., Zhjou, S., Liu, L., and Mitra, N. (2011). Animated construction of line drawings. *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*, 30(6).

[Li et al.(2011)Li, Wu, Chrysanthou, Sharf, Cohen-Or, and Mitra] Li, Y., Wu, X., Chrysanthou, Y., Sharf, A., Cohen-Or, D., and Mitra, N.J. (2011). Globfit: Consistently fitting primitives by discovering global relations. *ACM Transactions on Graphics (Proc. SIGGRAPH)*, 30(4).

[McCrae et al.(2011)McCrae, Singh, and Mitra] McCrae, J., Singh, K., and Mitra, N.J. (2011). Slices: A shape-proxy based on planar sections. *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*, 30(6).

[Ovsjanikov et al.(2011)Ovsjanikov, Li, Guibas, and Mitra] Ovsjanikov, M., Li, W., Guibas, L., and Mitra, N.J. (2011). Exploration of continuous variability in collections of 3d shapes. *ACM Transactions on Graphics (Proc. SIGGRAPH)*, 30(4).

[Yang et al.(2011)Yang, Yang, Pottmann, and Mitra] Yang, Y.L., Yang, Y.J., Pottmann, H., and Mitra, N.J. (2011). Shape space exploration of constrained meshes. *ACM Transactions on Graphics (Proc. SIG-GRAPH Asia)*, 30(6).

[Cheng et al.(2010)Cheng, Zhang, Mitra, Huang, and Hu] Cheng, M.M., Zhang, F.L., Mitra, N.J., Huang, X., and Hu, S.M. (2010). Repfinder: Finding approximately repeated scene elements for image editing. *ACM Transactions on Graphics (Proc. SIGGRAPH)*, 29(4).

[Chu et al.(2010)Chu, Hsu, Mitra, Cohen-Or, Wong, and Lee] Chu, H.K., Hsu, W.H., Mitra, N.J., Cohen-Or, D., Wong, T.T., and Lee, T.Y. (2010). Camouflage images. *ACM Transactions on Graphics (Proc. SIGGRAPH)*, 29(3).

[Eigensatz et al.(2010)Eigensatz, Kilian, Schiftner, Mitra, Pottmann, and Pauly] Eigensatz, M., Kilian, M., Schiftner, A., Mitra, N.J., Pottmann, H., and Pauly, M. (2010). Paneling architectural freeform surfaces. *ACM Transactions on Graphics (Proc. SIGGRAPH)*, 29(4).

[Karpenko et al.(2010)Karpenko, Li, Mitra, and Agrawala] Karpenko, O., Li, W., Mitra, N., and Agrawala, M. (2010). Exploded view diagrams of mathematical surfaces. *IEEE Transactions on Visualization and Computer Graphics*, 16:1311–1318.

[Li et al.(2010)Li, Liu, Zheng, and Mitra] Li, G., Liu, L., Zheng, H., and Mitra, N.J. (2010). Analysis, reconstruction and manipulation using arterial snakes. *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*, 29(5).

[Mehra et al.(2010)Mehra, Tripathi, Sheffer, and Mitra] Mehra, R., Tripathi, P., Sheffer, A., and Mitra, N.J. (2010). Visibility of noisy point cloud data. *Computers and Graphics*.

[Mitra et al.(2010)Mitra, Yang, Yan, Li, and Agrawala] Mitra, N.J., Yang, Y.L., Yan, D.M., Li, W., and Agrawala, M. (2010). Illustrating how mechanical assemblies work. *ACM Transactions on Graphics (Proc. SIGGRAPH)*, 29(3).

[Zheng et al.(2010)Zheng, Sharf, Wan, Li, Mitra, Cohen-Or, and Chen] Zheng, Q., Sharf, A., Wan, G., Li, Y., Mitra, N.J., Cohen-Or, D., and Chen, B. (2010). Non-local scan consolidation for 3d urban scenes. *ACM Transactions on Graphics (Proc. SIGGRAPH)*, 29(4).

[Gal et al.(2009)Gal, Sorkine, Mitra, and Cohen-Or] Gal, R., Sorkine, O., Mitra, N.J., and Cohen-Or, D. (2009). iwires: An analyze-and-edit approach to shape manipulation. *ACM Transactions on Graphics (Proc. SIGGRAPH)*, 28(3):#33, 1–10.

[Mehra et al.(2009)Mehra, Zhou, Long, Sheffer, Gooch, and Mitra] Mehra, R., Zhou, Q., Long, J., Sheffer, A., Gooch, A., and Mitra, N.J. (2009). Abstraction of man-made shapes. *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*, 28(5):#137, 1–10.

[Mitra et al.(2009)Mitra, Chu, Lee, Wolf, Yeshurun, and Cohen-Or] Mitra, N.J., Chu, H.K., Lee, T.Y., Wolf, L., Yeshurun, H., and Cohen-Or, D. (2009). Emerging images. *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*, 28(5).

[Mitra and Pauly(2009)] Mitra, N.J. and Pauly, M. (2009). Shadow art. *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*, 28(5).

[Aiger et al.(2008)Aiger, Mitra, and Cohen-Or] Aiger, D., Mitra, N.J., and Cohen-Or, D. (2008). 4-points congruent sets for robust surface registration. *ACM Transactions on Graphics (Proc. SIGGRAPH)*, 27(3):#85, 1–10.

[Kilian et al.(2008)Kilian, Flöry, Chen, Mitra, Sheffer, and Pottmann] Kilian, M., Flöry, S., Chen, Z., Mitra, N.J., Sheffer, A., and Pottmann, H. (2008). Curved folding. *ACM Transactions on Graphics (Proc. SIGGRAPH)*, 27(3):#75, 1–9.

[Pauly et al.(2008)Pauly, Mitra, Wallner, Pottmann, and Guibas] Pauly, M., Mitra, N.J., Wallner, J., Pottmann, H., and Guibas, L. (2008). Discovering structural regularity in 3D geometry. *ACM Transactions on Graphics (Proc. SIGGRAPH)*, 27(3):#43, 1–11.

[Pottmann et al.(2008)Pottmann, Grohs, and Mitra] Pottmann, H., Grohs, P., and Mitra, N.J. (2008). Laguerre minimal surfaces, isotropic geometry and linear elasticity. *Journal of Computational and Applied Mathematics*.

[Kilian et al.(2007)Kilian, Mitra, and Pottmann] Kilian, M., Mitra, N.J., and Pottmann, H. (2007). Geometric modeling in shape space. *ACM Transactions on Graphics (Proc. SIGGRAPH)*, 26(3):#64, 1–8.

[Mitra et al.(2007)Mitra, Guibas, and Pauly] Mitra, N.J., Guibas, L., and Pauly, M. (2007). Symmetrization. *ACM Transactions on Graphics (Proc. SIGGRAPH)*, 26(3):#63, 1–8.

[Mitra et al.(2006)Mitra, Guibas, and Pauly] Mitra, N.J., Guibas, L., and Pauly, M. (2006). Partial and approximate symmetry detection for 3d geometry. *ACM Transactions on Graphics (Proc. SIGGRAPH)*, 25(3):560–568.

[Mitra et al.(2004)Mitra, Nguyen, and Guibas] Mitra, N.J., Nguyen, A., and Guibas, L. (2004). Estimating surface normals in noisy point cloud data. *special issue of International Journal of Computational Geometry and Applications*, 14(4–5):261–276.

3.2 Refereed Conferences

[Zheng et al.(2015)Zheng, Prisacariu, Averkiou, Cheng, Mitra, Shotton, Torr, and Rother] Zheng, S., Prisacariu, V.A., Averkiou, M., Cheng, M.M., Mitra, N.J., Shotton, J., Torr, P.H., and Rother, C. (2015). Object proposals estimation in depth images using compact 3d shape manifolds. In *GCPR*.

[Amati et al.(2014)Amati, Mitra, and Weyrich] Amati, C., Mitra, N.J., and Weyrich, T. (2014). A study of image colourfulness. In *Proc. of Expressive (CAe+SBIM+NPAR)*, pp. 1–9.

[Mellado et al.(2014)Mellado, Song, Yan, Fu, and Mitra] Mellado, N., Song, P., Yan, X., Fu, C.W., and Mitra, N.J. (2014). Computational design and construction of notch-free reciprocal frame structures. In *Advances in Architectural Geometry*.

[Sicat et al.(2013)Sicat, Hadwiger, and Mitra] Sicat, R., Hadwiger, M., and Mitra, N.J. (2013). Graph abstraction for simplified proofreading of slice-based volume segmentation. In *EUROGRAPHICS Short Paper*.

[Alsisan and Mitra(2012)] Alsisan, S. and Mitra, N.J. (2012). Variation-factored encoding of facade images. In *EUROGRAPHICS Short Paper*.

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[Sawant and Mitra(2008)] Sawant, N. and Mitra, N.J. (2008). Color harmonization for videos. In *Indian Conference on Computer Vision, Graphics and Image Processing*.

[Mitra et al.(2007)Mitra, Flory, Ovsjanikov, Gelfand, Guibas, and Pottmann] Mitra, N.J., Flory, S., Ovsjanikov, M., Gelfand, N., Guibas, L., and Pottmann, H. (2007). Dynamic geometry registration. In *Symposium on Geometry Processing*, pp. 173–182.

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[Mitra and Nguyen(2003)] Mitra, N.J. and Nguyen, A. (2003). Estimating surface normals in noisy point cloud data. In *Proceedings of the nineteenth annual symposium on Computational geometry*, pp. 322–328.

[Mitra and Gupta(2002)] Mitra, N.J. and Gupta, M. (2002). A two-stage color palettization algorithm for error diffusion. In *SPIE Electronic Imaging Conference*, pp. 207–217.

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3.3 *Invited Articles*

N. J. Mitra. 3D Geometry Processing: From Acquisition to Shape Analysis, FIIT Forum, volume 15, no. 2, July 2009.
N. J. Mitra, Introductory graphics, revisited (book review), Computer-Aided Design, Volume 41, Issue 11, 2009.

3.4 *International Patents*

[Cheng et al.(2013)Cheng, Zhang, Mitra, Huang, and Hu] Cheng, M., Zhang, G., Mitra, N.J., Huang, X., and Hu, S. (2013). Image processing method and image processing device. US application 20120288189.

[Chu et al.(2013)Chu, Chang, Lee, and Mitra] Chu, H.K., Chang, C.S., Lee, R.R., and Mitra, N.J. (2013). Two dimensional code and method for creating the same. US application 13/962,650.

[Song et al.(2013)Song, Fu, Goswami, Zheng, Mitra, and Cohen-Or] Song, P., Fu, C.W., Goswami, P., Zheng, J., Mitra, N.J., and Cohen-Or, D. (2013). Interactive computational design methods for large reciprocal structures. US application 16303718.

[Cheng et al.(2012)Cheng, Zhang, Mitra, Huang, and Hu] Cheng, M., Zhang, G., Mitra, N.J., Huang, X., and Hu, S. (2012). Region contrast-based saliency detection approach. CN 201110124317.2.

[Mitra and Pauly(2009)] Mitra, N.J. and Pauly, M. (2009). Shadow art. European Patent application EP 09 014870.

[Mitra et al.(2008)Mitra, Guibas, and Pauly] Mitra, N.J., Guibas, L., and Pauly, M. (2008). System and methods for enhancing symmetry in 2d and 3d objects. US Patent 20100066760.

[Acharya et al.(2006a)Acharya, Biswas, and Mitra] Acharya, T., Biswas, P.K., and Mitra, N.J. (2006). Wavelet zerotree image coding of ordered bits. US Patent 7050640.

[Acharya et al.(2006b)Acharya, Biswas, and Mitra] Acharya, T., Biswas, P.K., and Mitra, N.J. (2006). Wavelet coding of video. US Patent 7020206.

[Acharya et al.(2006c)Acharya, Mitra, and Biswas] Acharya, T., Mitra, N.J., and Biswas, P.K. (2006). Wavelet zerotree coding of ordered bits. US Patent 7065253.

[Acharya et al.(2006d)Acharya, Mitra, and Biswas] Acharya, T., Mitra, N.J., and Biswas, P.K. (2006). Method of compressing a color image. US Patent 6798901.

4   Professional Activities

Conference Chair

2016: Siggraph Asia Course Chair

2014: Advances in Architectural Geometry (AAG)

2014: Siggraph Asia Workshop on Indoor Scene Understanding

Program Chair

2015: Pacific Graphics (PG)

2012: Symposium on Geometry Processing (SGP)

2011: Shape Modeling International (SMI)

Associate Editor

Computer Graphics Forum (CGF) since 2013

Transactions on Graphics (TOG) since 2012

Visual Computer (2012 - 2015)

    Computers & Graphics (2009 – 2013)

Program Committees

    SIGGRAPH 2011, 2012, 2016

    SIGGRAPH Asia 2009, 2010, 2013, 2014

    EUROGRAPHICS 2012, 2013, 2014, 2015

    Symposium on Geometry Processing (SGP) 2008 – 2011, 2013 – 2014

    CVPR 2013

    ECCV 2012

    ICCV 2011

    ACCV 2010

    Eurographics 3DOR 2012, 2013

    3DPVT 2012

    CVPR workshop 2012

    NORDIA 2009 – 2014

    Pacific Graphics 2009 – 2014

    SIAM/SCM Geometric and Physical Modeling 2009, 2011, 2013

    Advances in Architectural Geometry 2008, 2010, 2012, 2014

4.1 PhD Students

Melinos Averkios (UCL, graduated 2015)

Bongjin Koo (UCL, started 2012)

James Hennessey (UCL, started 2013)

Moos Heuting (UCL. started 2013)

Aron Monszpart (UCL, started 2013)

Tuanfeng Wang (UCL, started 2014)

Han Liu (KAUST, 2011-2016)

Sawsan AlHalawani (KAUST,started 2012)

Duygu Ceylan (EPFL, graduated 2015, coadvised)

James McCrae (Univ. Toronto, graduated 2013, coadvised)

Yangyan Li (SIAT, graduated 2013, coadvised, current: postdoc Stanford University)

Ming-Ming Cheng (Tsinghua University, graduated 2012, coadvised, current: Assoc. Professor, Nankai University)

Hung Kuo Chu (NCKU, graduated 2010, coadvised, current: assistant prof. National Tsing Hua Univ.)

4.2 *PhD Examinations (external)*

SFU, Nov 2015

INRIA, Oct 2015

EPFL, June 2014

ETH Zurich, January 2014

University of Surrey, November 2013

INRIA, October 2013

Glasgow University, August 2013

Durham University, August 2013

INRIA Bordeaux, December 2012

Trinity College Dublin, August 2012

TU Vienna, September 2011

INRIA Sophia-Antipolis, December 2009

4.3 *Funding*

Oct. 2014 – Sept. 2016: Microsoft Phd Scholarship

Nov. 2013 – Nov. 2018: ERC Starting Grant 33573

Aug. 2013: Adobe Research Award

Nov. 2012 – Oct. 2016: Marie Curie Career Integration Grant 303541

Nov. 2012 – Oct. 2016: UCL Impact Award

2012 – 2013: China State Council Fund 201206210192

Dec. 2011: Adobe Research Award

July 2010 – July 2011: KAUST-Stanford AEA grant on digital restoration

May 2009 – July 2011: baseline research fund

Sept. 2007: IIT Delhi startup funding

4.4 *Keynote Talks*

VMV, Germany, 2015

GCD, Austria, 2014

ACM CAD/Graphics, HongKong, November 2013

Spanish CG conference, September 2013

Symposium on Geometry Processing, Genoa, July 2013

RIVIC workshop, March 2012

Trends in Mathematical Imaging and Surface Processing, Oberwolfach 2011

Pacific Graphics, Hangzhou, 2010

Curves and Surfaces, Avignon, 2010

NORDIA in conjunction with ICCV, Kyoto 2009

4.5   *Invited Talks*

2/9/2014 Dagstuhl, Germany

15/8/2014 Adobe, Seattle, US

21/3/2014 Computer Science, Cambridge University, UK

10/3/2014 IST, Austria

21/2/2014 Mechanical Engineering, Cambridge University, UK

29/1/2014 ETH Zurich, Switzerland

31/8/2013 Strobl, Austria

14/3.2013 London Knowledge Lab, UK

18/2/2013 Herrenalb, Germany

11/2/2013 Oxford University, UK

7/12/2012 Inria Bordeaux, France

25/10/2012 IMAGINE Group, Inria, France

15/09/2012 Imperial College, UK

14/08/2012 Trinity College, Dublin, Ireland

31/07/2012 Microsoft Research Cambridge, UK

02/05/2012 Fashion Design Studio, London, UK

08/03/2012, Cardiff University, UK

01/02/2012, VEIV Industry Day, UCL, UK

24/08/2011, Inspiration from Nature, Harvard University

25/03/2011, President's Series Lecture, KAUST, KSA

03/03/2011, Indian Statistical Institute, India

02/02/2011, Oberwolfach, Germany

10/12/2010, TU Graz, Austria

25/10/2010 Carnegie Melon University, Qatar, 2010

15/06/2010 Summer Research Institute, EPFL, Lausanne

21/05/2010 Computer Graphics Institute, TU Vienna

31/03/2010 Department of Computer Science, Stanford University, CA

29/03/2010 Graphics Laboratory, University of California, Berkeley

27/09/2009 keynote NORDIA in conjunction with ICCV 2009, Kyoto, Japan

30/07/2009 Graphics Laboratory, Stanford University, CA

04/07/2009 Adobe, Delhi, India

16/06/2009 University of Hong Kong

18/06/2009 Tsinghua University, China

23/01/2009 BITS, Pilani, India

01/11/2008 Indian Institute of Technology, Kharagpur

08/07/2008 Graphics Laboratory, Stanford University, CA

04/21/2008 TCS Workshop on Virtual Reality and its Appl. to Enterprises, New Delhi, India

02/5/2007 Indo-Israel Workshop on Computer Vision, Hyderabad, India

09/15/2007 Workshop on Polyhedral Surfaces and Industrial Applications, Strobl, Austria

08/03/2007 Google TechTalk, Mountain View, CA

06/29/2007 University of Tübingen

04/26/2007 Indian Institute of Technology, Kanpur

04/25/2007 Indian Institute of Technology, Delhi

04/24/2007 Indian Institute of Science, Bangalore

04/23/2007 Indian Institute of Technology, Mumbai

22/03/2007 FSP Industrial Geometry workshop, Graz

02/12/2007 Indian Institute of Technology, Kharagpur

05/08/2006 DARPA Topological Data Analysis Program Annual Meeting, Santa Barbara, CA

03/04/2006 Faculty lunch in the department of Computer Science, Stanford

10/30/2005 DARPA Topological Data Analysis Program Annual Meeting, San Rafael, CA

07/25/2005 ITR Meeting on Deformable Modeling, Rutgers University

07/07/2004 Vienna University of Technology, Vienna

05/19/2004 DARPA/NSF CARGO Program, Madison, WI

05/26/2003 DARPA/NSF CARGO Program, Santa Rosa, CA

5 Teaching

Acquisition and Processing of 3D Geometry, UCL, Winter 2012, 2013, 2014, 2015

Image Processing, UCL, Fall 2012-13

Image Processing, UCL, Fall 2011-12

Advanced Topics in Geometry Processing, TU Vienna, Spring 2010-11

Advanced Computer Graphics, KAUST, Spring 2010-11

Advanced Topics in Geometry Processing, TU Vienna, Fall 2010-11

Computer Graphics, KAUST, Fall 2010-11

Advanced Topics in Geometry Processing, TU Vienna, Spring 2009-10

Advanced Computer Graphics, KAUST, Spring 2009-10

Computer Graphics, KAUST, Fall 2009-10

Advanced Computer Graphics, IIT Delhi, Spring 2008-09

Introduction to Computer Graphics, IIT Delhi, Fall 2008-09

Computer Vision, IIT Delhi, Spring 2007-08

Introduction to Computer Graphics, IIT Delhi, Fall 2007-08

5.1 Short Courses

N. J. Mitra, M. Wand, H. Zhang, D. Cohen-Or, V. Kim, Q. Huang, Structure-aware Shape Processing, Siggraph 2014 course.

N. J. Mitra, M. Wand, H. Zhang, D. Cohen-Or, V. Kim, Q. Huang, Structure-aware Shape Processing, Siggraph Asia 2013 course.

N. J. Mitra, Workshop on Graphics and Geometry, USTC, Hefei, July 2013.

N. J. Mitra, M. Ovsjanikov, M. Pauly, D. Ceylan, M. Wand, Symmetry in Shapes: Theory and Practice, Eurographics 2013 course.

N. J. Mitra, Symmetry in Geometry: Theory and Applications, University of Zurich summer school, 2012.

W. Chang, H. Li, N. J. Mitra, M. Pauly, M. Wand, Dynamic Geometry Processing, Eurographics 2012 course.

W. Chang, H. Li, N. J. Mitra, M. Pauly, S. Rusinkiewicz, M. Wand, Computing Correspondences in Geometric Data Sets, Eurographics 2011 course.

W. Chang, H. Li, N. J. Mitra, M. Pauly, M. Wand, Geometric Registration for Deformable Shapes, Eurographics 2010 course.

N. J. Mitra, Introduction to Geometry Processing, Adobe (India) 2009.

5.2 *Summer Schools*

Digital Fabrication, UCL London, June 2013 (organizer/intructor)

CMU Qatar, May-June 2011 (organizer/instructor)

IIT Delhi, May-July 2009 (organizer/instructor)

IIT Delhi, May-July 2008 (organizer/instructor)

IIT Delhi, May-July 2007 (organizer/instructor)

6 Major Awards

2015 BCS Roger Needham award

2014 ACM Research Highlight (for Siggraph 2012 paper titled "Guided Exploration of Physically Valid Shapes for Furniture Design")

2014 Best paper for "Super 4PCS: Fast Global Pointcloud Registration via Smart Indexing" at SGP 2014

2014 Second prize for "Recurring Part Arrangements in Shape Collections" at Eurographics 2014

2013 ACM Siggraph Significant Young Researcher Award

2012 ACM Research Highlight (for Siggraph 2010 paper titled "Illustrating How Mechanical Assemblies Work")

2007 - 2009 Outstanding Young Faculty Fellowship, sponsored by Microsoft (India)

2006 Stanford Business School Fellowship

2000 - 2005 Stanford Graduate Fellowship (Joseph W. and Hon Mai Goodman Fellowship)

1999 President's Silver Medal, IIT, Kharagpur

1999 Swapan Kumar Saha Memorial Award, IIT, Kharagpur

1999 Bigyan Sinha Memorial Award, IIT, Kharagpur

1999 Institute Proficiency Prize for Best Project, IIT, Kharagpur

1995 Jagadish Bose National Science Talent Search Award

6.1 *Exhibits/artwork*

Shadow Art led to the production of *Silhouettes of Jazz*, which was nominated as the top three for Best in Show Award SIGGRAPH 2009 Computer Animation Festival (webpage: http://www.silhouettesofjazz.com/).

6.2 *Media Coverage*

Reported in science media including BBC Wildlife, New Scientist, Science et Vie Junior, Science Daily, Technology Review, Jerusalem Post, etc.