

Curriculum Vitae

Niloy J. Mitra
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1 ACADEMIC BACKGROUND

2009 - present	Assistant Professor Dept. of Mathematical and Computer Science, KAUST
2007 - present	Assistant Professor Dept. of Computer Science and Engineering, Indian Institute of Tech., Delhi
2006 - 2007	Vienna University of Technology Postdoctoral scholar Advisor: Prof. Helmut Pottmann
2002 - 2006	Stanford University PhD in Electrical Engineering Advisor: Prof. Leonidas J. Guibas GPA 4.09/4.00
2000 - 2002	Stanford University MS in Electrical Engineering GPA 4.09/4.00
1995 - 1999	Indian Institute of Technology, Kharagpur, India BS in Electronics and Communication Engineering Advisor: Prof. Prabir K. Biswas GPA 9.63/10.00

2 FURTHER ACADEMIC EXPERIENCE

Dec. 2008 - Jan. 2009	Visiting faculty, ETH, Zurich
August 2008	Research visit to Stanford University Collaborator: Leonidas J. Guibas
June 2008 - Jul. 2008	Research visit to the Institute of TU Vienna and ETH Zurich Collaborators: Helmut Pottmann, Mark Pauly
Dec. 2007 - Jan. 2008	Research visit to the Institute of TU Vienna and ETH Zurich Collaborators: Mark Pauly, Helmut Pottmann, Johannes Wallner
Jan. 2007 - Jan. 2007	Research visit to the Institute of Scientific Computing, ETH, Zurich Advisor: Assistant Prof. Mark Pauly
Dec. 2005 - Feb. 2006	Research visit to the Institute of Scientific Computing, ETH, Zurich Advisor: Assistant Prof. Mark Pauly
June 2004 - Aug. 2004	Research visit to the Institute of Scientific Computing, ETH, Zurich Advisor: Prof. Markus Gross

3 PUBLICATIONS

• 3.1 JOURNALS

- N. J. Mitra, M. Pauly, Shadow Art, ACM SIGGRAPH Asia, Volume 28, Number 5, pp. 156-1 – 156-7, 2009.
- N. J. Mitra, H. Chu, T. Lee, L. Wolf, H. Yeshurun, D. Cohen-Or, Emerging Images, ACM SIGGRAPH Asia, Volume 28, Number 5, pp. 163-1 – 163-8, 2009.
- R. Mehra, Q. Zhou, J. Long, A. Sheffer, A. Gooch, N. J. Mitra, Abstraction of Man-Made Shapes, ACM SIGGRAPH Asia, Volume 28, Number 5, pp. 137-1 – 137-10, 2009.
- R. Gal, O. Sorkine, N. J. Mitra, D. Cohen-Or, iWires: An Analyze-and-Edit Approach to Shape Manipulation, ACM SIGGRAPH, Volume 28, Number 3, pp. 33-1 – 33-10, 2009.
- D. Aiger, N. J. Mitra, D. Cohen-Or, 4-points Congruent Sets for Robust Surface Registration, ACM SIGGRAPH, Volume 27, Number 3, pp. 85-1 – 85-10, 2008.
- M. Kilian, S. Floery, Z. Chen, N. J. Mitra, A. Sheffer, H. Pottmann, Curved Folding, ACM SIGGRAPH, Volume 27, Number 3, pp. 75-1 – 75-9, 2008.
- H. Pottmann, P. Grohs, N. J. Mitra, Laguerre Minimal Surfaces, Isotropic Geometry and Linear Elasticity, Advances in Computational Mathematics, May 2008.
- N. J. Mitra, L. Guibas and M. Pauly, Symmetrization. ACM SIGGRAPH, Volume 26, Number 3, pp. 63-1 – 63-8, 2007.
- M. Kilian, N. J. Mitra and H. Pottmann, Geometric Modeling in Shape Space ACM SIGGRAPH, Volume 26, Number 3, pp. 64-1 – 64-8, 2007.
- N. J. Mitra, L. Guibas and M. Pauly. Partial and Approximate Symmetry Detection for 3D Geometry. ACM Transactions on Graphics, ACM SIGGRAPH, Volume 25, Number 3, pp. 560 – 568, 2006.
- N. J. Mitra, A. Nguyen, L. Guibas. Estimating Surface Normals in Noisy Point Cloud Data. International Journal of Computational Geometry and Applications, Volume 14, Numbers 4 – 5, pp. 261 – 276, October 2004.

• 3.2 REFEREED CONFERENCES

- N. Sawant and N. J. Mitra, Color Harmonization for Videos. In Proceedings of Indian Conference on Computer Vision, Graphics and Image Processing (2008), pp. 576 – 582.
- N. J. Mitra and M. Pauly, Symmetry for Architectural Design. In Proceedings of Advances in Architectural Geometry (2008), pp. 13 – 16.
- M. Kilian, S. Floery, Z. Chen, N. J. Mitra, A. Sheffer and H. Pottmann, Developable Surfaces with Curved Creases. In Proceedings of Advances in Architectural Geometry (2008), pp. 33 – 36.
- N. J. Mitra, S. Flory, M. Ovsjanikov, N. Gelfand, L. Guibas and H. Pottmann. Dynamic Geometry Registration. In Proceedings of the Symposium on Geometry Processing (2007), pp. 173 – 182.
- N. J. Mitra, L. Guibas, J. Giesen, M. Pauly. Probabilistic Fingerprints for Shapes. In Proceedings of the Symposium on Geometry Processing (2006), pp. 121 – 130.
- M. Pauly, N. J. Mitra, J. Giesen, M. Gross and L. Guibas. Example-Based 3D Scan Completion. In Proceedings of the Symposium on Geometry Processing (2005), pp. 23 – 32.
- N. Gelfand, N. J. Mitra, L. Guibas and H. Pottmann. Robust Global Registration. In Proceedings of the Symposium on Geometry Processing (2005), pp. 197 – 206.
- N. J. Mitra, N. Gelfand, H. Pottmann and L. Guibas. Registration of Point Cloud Data from a Geometric Optimization Perspective. In Proceedings of the Symposium on Geometry Processing (2004), pp. 23 – 32.
- M. Pauly, N. J. Mitra and L. Guibas. Uncertainty and Variability in Point Cloud Surface Data. In Proceedings of the Symposium on Point-Based Graphics (2004), pp. 77 – 84.
- N. J. Mitra, A. Nguyen and L. Guibas. Estimating Surface Normals in Noisy Point Cloud Data. In Proceedings of the Symposium on Computational Geometry (2003), pp. 322 – 328.

3.2 REFEREED CONFERENCES (cont.)

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

N. J. Mitra, P. K. Biswas and T. Acharya. Modified Embedded Zerotree Scheme for Efficient Coding of Discrete Wavelet Coded Frames. In Proceedings of the Indian Conference on Computer Vision, Graphics and Image Processing (2000).

• 3.3 INVITED ARTICLE

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 PATENTS

N. J. Mitra and M. Pauly, Shadow Art, European Patent application EP 09 014870, 2009.

M. Pauly, N. J. Mitra and L. Guibas. Detection Regular Structures in 3D Geometry , *US Patent (under review)*, 2008.

N. J. Mitra. L. Guibas and M. Pauly. System and Methods for Providing Symmetry in 2D and 3D Objects , *US Patent (under review)*, 2008.

T. Acharya, N. J. Mitra and P. K. Biswas. Wavelet zerotree coding of ordered bits, *US Patent 7065253*, June 2006.

T. Acharya, P. K. Biswas and N. J. Mitra. Wavelet zerotree image coding of ordered bits, *US Patent 7050640*, May 2006.

T. Acharya, P. K. Biswas and N. J. Mitra. Wavelet coding of video, *US Patent 7020206*, March 2006.

T. Acharya, N. J. Mitra and P. K. Biswas. Method of Compressing a Color Image, *US Patent 6798901*, September 2004.

4 PROFESSIONAL ACTIVITIES

Program Committee

Advances in Architectural Geometry 2010, 2008
APSIPA 2009
Asian Conference on Computer Vision (ACCV) 2009
Eurographics Short Papers 2009, 2008
FCST 2010
NORDIA 2009
Pacific Graphics 2010, 2009
SIAM/SCM Geometric and Physical Modeling 2009
SPM 2010
SIGGRAPH Asia Technical Papers 2010, 2009
Symposium on Geometry Processing 2010, 2009, 2008

External Reviewer

ACM SIGGRAPH
ACM SIGGRAPH Asia
Computer Aided Design
Computer Aided Geometric Design
Eurographics
IEEE Pattern Recognition and Machine Intelligence
Indian Conference on Computer Vision, Graphics and Image Processing
International Journal of Computer Vision

Logic for Programming, Artificial Intelligence and Reasoning
 Pattern Analysis and Machine Intelligence
 Pattern Recognition Letters
 Pacific Graphics
 Shape Modeling and Applications
 Shape Modeling International
 Symposium on Computational Geometry
 Symposium on Geometry Processing
 Symposium on Point-Based Graphics
 Transactions of Graphics
 Visual Computing

5 INVITED TALKS*

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

6 RESEARCH EXPERIENCE

Sept. 2006 – Sept. 2007	Postdoctoral scholar, Vienna University of Technology
Jan. 2006 – Sept. 2006	Research Assistant, Department of Mathematics, Stanford University
June 2005 – Dec. 2005	Research Assistant, Department of Computer Science, Stanford University
June 2001 – May 2005	Research under the guidance of Prof. L. Guibas, Stanford University
Aug. 1999 – May 2000	Junior Research Assistant, IIT, Kharagpur
May 1998 – July 1998	Internship, Electronics Research and Development Centre, Calcutta, India

* Excludes local and conference talks.

7 TEACHING EXPERIENCE

Winter 2009 – 2010	Instructor, Geometric Modeling, KAUST Instructor, Numerical Optimization, KAUST
Fall 2009 – 2010	Instructor, Computer Graphics, KAUST
Summer 2008, 2009	Coordinator, Workshop on Computer Graphics and Vision, IIT Delhi
Winter 2008 – 2009	Instructor, Computer Graphics, IIT Delhi
Fall 2008 – 2009	Instructor, Advanced Computer Graphics, IIT Delhi
Winter 2007 – 2008	Instructor, Computer Vision, IIT Delhi
Spring 2007	Instructor, Industrial Geometry (jointly taught with Prof. H. Pottmann) Vienna University of Technology
Winter 2002 – 2003	Teaching Assistant, Computer Graphics: Geometric Modeling, Stanford Univ.
Winter 2001 – 2002	Teaching Assistant, Computer Graphics: Geometric Modeling, Stanford Univ.

8 AWARDS and SCHOLARSHIPS

2007 – present	Outstanding Young Faculty Fellowship, sponsored by Microsoft
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	Jagdish Bose National Science Talent Search Award

9 GENERAL INFORMATION

07/10/1976	Born in Calcutta, India
Marital Status	Married
Citizenship	India
Languages	English (fluent), Hindi (fluent), Bengali (fluent)

10 REFERENCES

Prof. D. Cohen-Or	School of Computer Science, Tel Aviv University dcor@tau.ac.il
Prof. L. Guibas	Department of Computer Science, Stanford University guibas@cs.stanford.edu
Associate Prof. M. Pauly	EPFL, Lausanne mark.pauly@epfl.ch
Prof. H. Pottmann	Geometric Modeling and Industrial Geometry Vienna University of Technology, Vienna pottmann@geometrie.tuwien.ac.at