

## ADITI MAJUMDER

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**Areas Of Interest** Multi-Projector Displays, Visualization, Computer Graphics, Computer Vision, Image Processing, Human Perception, Virtual Reality, Human Computer Interaction, Visualization Tools.

**Education** University of North Carolina at Chapel Hill  
**PhD in Computer Science** (1996- 2003).  
Thesis: *A Practical Framework to Achieve Perceptually Seamless Multi-Projector Displays*

Jadavpur University, Calcutta, India  
**B.E in Computer Science and Engineering** (1992-1996)  
*Silver Medalist in the Engineering Faculty for Overall Academic Performance in Senior Years (1994-1996)*  
*Gold Medalist in the Engineering Faculty for Overall Academic Performance in Junior Years (1992-1994)*

**Experience** **Professor** (2014-Present)  
Department of Computer Science, UC-Irvine

**Collaborating Researcher** (2016 - Present)  
Army Research Laboratories

**Expert Consultant** (2012)  
Allosphere, UC Santa Barbara, CA

**Expert Consultant** (2011)  
Cubic Technologies, Orlando, FL

**Expert Consultant** (2009-2010)  
Disney Imagineering, Glendale, CA

**Associate Professor** (2009-2014)  
Department of Computer Science, UC-Irvine

**Expert Consultant** (2005-2008)  
Ostendo Technologies, Carlsbad, CA

**Assistant Professor** (2003-2009)  
Department of Computer Science, UC Irvine

**Student Research Fellow** (2001-2003)  
Mathematics and Computer Science Division, Argonne National Laboratory, Argonne, IL

**Givens Associate** (Summer 2001)  
Mathematics and Computer Science Division, Argonne National Laboratory, Argonne, IL

**Graduate Student Fellow** (Summer 1999)  
Bell Laboratories, Holmdel, NJ

**Graduate Student Researcher** (1998-2001)  
Department of Computer Science, UNC Chapel Hill

**Courses/Tutorials/  
Panels** Aditi Majumder and Behzad Sajadi  
*Building your own Projection Based VR Display System,*  
**Course Organizer, IEEE Virtual Reality, March 2010**

**Invited Author/Speaker on Large Format Displays**  
*Projectors for Graphics,*  
**ACM SIGGRAPH, 2008** (Course Organizer: Ramesh Raskar, Oliver Bimber)

**Invited Panelist**  
*The Future of Projector-Camera Systems*

## IEEE International Workshop on Projector-Camera Systems (PROCAMS), 2008

Aditi Majumder and Michael S. Brown,  
*Camera-Based Vision Techniques to Build Large-Area Multi-Projector Displays*  
**Course Organizer, IEEE International Conference on Computer Vision and Pattern Recognition, June 2005**

Aditi Majumder and Michael S. Brown,  
*Camera-Based Techniques for Building Large-Area Multi-Projector Displays*  
**Course Organizer, ECCV (European Conference on Computer Vision), May 2004**

Aditi Majumder and Michael S. Brown,  
*Building Large Area Displays*  
**Course Organizer, Eurographics, September 2003**

Aditi Majumder and Michael S. Brown,  
*Large-Scale Displays for the Masses: Techniques for Building Affordable and Flexible Multi-Projector Displays*  
**Course Organizer, ACM SIGGRAPH, July 2003**

## Publications

### Book

- B2. Aditi Majumder and M. Gopi, "Introduction to Visual Computing: Core Concepts in Computer Vision, Graphics and Image Processing", CRC Press, August 2016.
- B1. Aditi Majumder, Michael S. Brown, " Practical Multi-Projector Display Design", A. K. Peters, August, 2007

### Book Chapters

- E2. Aditi Majumder, "Ubiquitous Displays", *Distributed Video Sensor Networks*, Edited By B. Bhanu, C.V. Ravishankar, A. K. Roy Chowdhury, H. Aghajan, D. Terzopolous, 2011.
- E1. Aditi Majumder, "Computer Graphics Optique: Optical Superposition of Projected Computer Graphics", *Energy Simulation-Training, Ocean Engineering and Instrumentation, Research Papers of Link Foundation Fellows, Volume 2, Brian J. Thompson (Ed.)*, 2002.

### Refereed Journal Articles

- J28. Ke Li, Bo Yan, Jun Li, Aditi Majumder " Seam Carving Based Aesthetic Enhancements for Photos", *Signal Processing: Image Communications*, 39(C), November 2015, pp. 509-516.
- J27. Yuqi Li, Aditi Majumder, Dongming Lu, M. Gopi, "Content-Independent Multi-Spectral Display Using Superimposed Projections", *Computer Graphics Forum*, 34(2), May 2015, pp. 337-348, **Presented at Eurographics 2015.**[27% acceptance].
- J26. Duy Qoc-Lai, Behzad Sajadi, Shan Jiang, Aditi Majumder, M. Gopi, "A Distributed Memory Hierarchy and Data Management for Interactive Scene Navigation and Modification on Tiled Display Walls", *IEEE Transactions on Visualization and Computer Graphics*, 21(6), June, 2015, pp.714-729, **Presented at IEEE Virtual Reality 2015.** [26% Acceptance]
- J25. JoAnn Kuchera-Morin, Matthew Wright, Graham Wakefield, Charlie Roberts, Dennis Adderton, Behzad Sajadi, Tobias Hollerer, Aditi Majumder, "Immersive Full-Surround Multi-User System Design", *Computers and Graphics*, vol. 40, pp. 10-21, 2014 [30% acceptance].
- J24. Kiarash Amiri, Shih-Hsien Yang, Fadi Kurdahi, Magda El Zarki, Aditi Majumder, "Mobile Collaborative Video", *IEEE Transactions on Circuits and Systems for Video Technology*, 2014.
- J23. Aditi Majumder, Behzad Sajadi, "Large Area Displays: The Changing Face of Visualization", *IEEE Computer*, 46(5), May, 2013, pp. 26-33 [Invited].
- J22. Behzad Sajadi, Aditi Majumder, Manuel Menezes De Oliveira Neto, Rosalia G. Schneider, Ramesh Raskar, "Using Patterns to Encode Color Information in Dichromats", *IEEE Transactions in Visualization and Computer Graphics*, 19(1), January 2013, pp. 118-129, **Presented in IEEE Information Visualization 2012** [26% acceptance].

- J21. Behzad Sajadi, M. Gopi, Aditi Majumder, "Edge-Guided Resolution Enhancement in Projectors Via Optical Pixel Sharing", *ACM Transactions on Graphics*, 31(4), article 79, 2012, **Presented in ACM Siggraph, 2012** [21% acceptance].
- J20. Dan Aliaga, Yu Hong Yeung, Alvin J. Law, Behzad Sajadi, Aditi Majumder, "Fast High-Resolution Appearance Editing Using Superimposed Projections", *ACM Transactions on Graphics*, 31(2), article 13, 2012, **Presented in ACM Siggraph 2012** [23% acceptance].
- J19. Koel Das, Aditi Majumder, Monica Siegenthaler, Hans Keirstead, M. Gopi, "Automated Cell Classification and Visualization for Analyzing Remyelination Therapy", *The Visual Computer*, 27(12), pp. 1055-1069, 2011 [40% acceptance].
- J18. Behzad Sajadi, Aditi Majumder, "Auto-Calibration of Multi-Projector CAVE-like Immersive Environments", *IEEE Transactions on Visualization and Computer Graphics*, 18(3), pp. 381-393, 2011 [26% acceptance].
- J17. Alvin J. Law, Daniel Aliaga, Behzad Sajadi, Aditi Majumder, Zygmunt Pizlo, "Perceptually Based Appearance Modification for Complaint Appearance Editing", *Computer Graphics Forum*, 30(8), pp. 2288-2300, 2011, **Presented in IEEE Scientific Visualization 2011** [29% acceptance].
- J16. Behzad Sajadi, Aditi Majumder, Kazuhiro Hiwada, Atsuto Maki, Ramesh Raskar, "Switchable Primaries Using Shiftable Layers of Color Filter Arrays", *ACM Transactions on Graphics*, 30(4), article 65, 2011, **Presented in ACM Siggraph 2011** [18% acceptance].
- J15. Behzad Sajadi, Aditi Majumder, "Automatic Registration of Multi-Projector Domes Using a Single Uncalibrated Camera", *Computer Graphics Forum*, 30(3), pp. 1161-1170, 2011, **Presented in EUROVIS 2011** [30% acceptance].
- J14. Behzad Sajadi, Aditi Majumder, "Auto-Calibrating Tiled Projectors On Piecewise Smooth Vertically Extruded Surfaces", *IEEE Transactions on Visualization and Computer Graphics*, 17(9), pp. 1209-1222, 2011 [26% acceptance].
- J13. Pablo Roman, Maxim Lazarov, Aditi Majumder, "A Scalable Distributed Paradigm for Multi-User Interaction with Tiled Rear Projection Display Walls", *IEEE Transactions on Visualization and Computer Graphics*, 16 (6), pp. 1623-1632, 2010, **Presented in IEEE Scientific Visualization 2010** [26% acceptance].
- J12. Alvin J. Law, Daniel Aliaga, Aditi Majumder, "Projector Placement Planning for High Quality Visualizations on Real World Colored Objects", *IEEE Transactions on Visualization and Computer Graphics*, 16(6), 2010, pp. 1633-1641, **Presented in IEEE Scientific Visualization 2010** [26% acceptance]
- J11. Behzad Sajadi, Aditi Majumder, "Scalable Multi-View Registration for Multi-Projector Displays on Vertically Extruded Surfaces", *Computer Graphics Forum*, 29(3), pp.1063-1072, 2010, **Presented at EUROVIS 2010** [30.5% acceptance].
- J10. Behzad Sajadi, Aditi Majumder, "Markerless View-Independent Registration of Multiple Distorted Projectors on Extruded Surfaces Using Uncalibrated Camera", *IEEE Transactions on Visualization and Computer Graphics*, 15(6), pp. 1307-1316, 2009, **Presented and Received the Second Best Paper Award in IEEE Scientific Visualization 2009** [26% acceptance]
- J9. Behzad Sajadi, Maxim Lazarov, M. Gopi, Aditi Majumder, "Color Seamlessness in Multi-Projector Displays Using Constrained Gamut Morphing", *IEEE Transactions on Visualization and Computer Graphics*, 15(6), pp. 1317-1326, 2009, **Presented at IEEE Scientific Visualization 2009** [26% acceptance]
- J8. Aditi Majumder, Ezekiel Bhasker, Ray Juang, "Advances towards high-resolution pack-and-go displays: A survey", *Journal for the Society of Information Display (JSID), Special Issue for Selected papers from SID Symposium*, 16(3), pp. 481-491, 2007. [7% acceptance]
- J7. Ezekiel Bhasker, Ray Juang, Aditi Majumder, "Registration Techniques for Using Imperfect and Partially Calibrated Devices in Planar Multi-Projector Displays", *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, 13(6), pp. 1368-1375, 2007, **Presented in IEEE Visualization, 2007**.
- J6. Aditi Majumder, Sandra Irani, "Perception Based Contrast Enhancement of Images", *ACM Transactions on Applied Perception*, Vol. 4, No. 3, Article 17, November 2007 .

- J5. Ezekiel Bhasker, Pinaki Sinha, Aditi Majumder, "Asynchronous Distributed Calibration for Scalable and Reconfigurable Multi-Projector Displays", *IEEE Transactions on Visualization and Computer Graphics*, 12(5), pp 1101-1108, 2006, **Presented in IEEE Visualization 2006**.
- J4. Aditi Majumder, M. Gopi, "Modeling Color Properties of Tiled Displays", *Computer Graphics Forum* Vol. 24, No. 2, pp 149-163, June, 2005.
- J3. Michael Brown, Aditi Majumder, Ruigang Yang, "Camera Based Calibration Techniques for Seamless Multi-Projector Displays", *IEEE Transactions on Visualization and Computer Graphics*, Vol. 11, No. 2, pp 193-206, March-April, 2005
- J2. Aditi Majumder, Rick Stevens, "Perceptual Photometric Seamlessness in Projection-Based Tiled Displays", *ACM Transactions on Graphics*, Vol. 24, No. 1, pp 118-139, January 2005.
- J1. Aditi Majumder, Rick Stevens, "Color Non-Uniformity in Projection Based Displays: Analysis and Solutions", *IEEE Transactions on Visualization and Computer Graphics*, Vol. 10, No. 2, pp 177-188, March-April, 2004.

#### Refereed Conference/Workshop Publications

- C44. Mahdi Abbaspour Tehrani, M. Gopi, Aditi Majumder, "Auto-Calibration of Multi-Projector Systems on Arbitrary shapes", *IEEE Applied Imagery and Pattern Recognition Workshop*, IEEE Applied Imagery and Pattern Recognition Workshop: Imaging and Artificial Intelligence: Intersection and Synergy, Oct 2016.
- C43. Yuqi Li, Hao Zhang, M. Gopi, Aditi Majumder, "Computational Spectral Capture and Display", *IEEE Applied Imagery and Pattern Recognition Workshop: Imaging and Artificial Intelligence: Intersection and Synergy*, Oct 2016.
- C42. Hung Nguyen, Fadi Kurdahi, Aditi Majumder, "Resource Aggregation for Collaborative Video from Multiple Projector enabled Mobile Devices", *ACM/IEEE Symposium on Embedded Systems and Real Time Multimedia*, ESWeek, 2016. [28% acceptance]
- C41. Mahdi Abbaspour Tehrani, M. Gopi, Aditi Majumder, "Correcting Perceived Perspective Distortions Using Object Specific Planar Transformations", *International Conference on Computational Photography*, 2016 [26% acceptance].
- C40. Behzad Sajadi, Mahdi Abbaspour Tehrani, Mehdi Rahimzadeh, Aditi Majumder, "High Resolution Lighting of 3D Reliefs Using a Network of Projectors and Cameras", *IEEE 3DTV Conference*, 2015, **Best Paper Award**. [35% acceptance]
- C39. Duy Qoc-Lai, Aditi Majumder, "Interactive Display Conglomeration on the Wall", *IEEE Virtual Reality Workshop on Everyday Virtual Reality: Rethinking Virtual Reality for Home and Office Environments (WEVR)*, 2015.
- C38. Kyle Cutler, Zachary DeStefano, Soroush M. Zarandi, Thomas D. O'Sullivan, Albert E. Cerussi, Gopi Meenakshisundaram, Aditi Majumder, Seung-ha Lee, Bruce J. Tromberg, "Real-time Mapping and Tracking of Optical Properties in Deep Tissue", *SPIE Photonics, Optical Tomography and Spectroscopy of Tissue XI*, Feb 2015, paper 9319-58.
- C37. Mahdi Abbaspour Tehrani, Aditi Majumder, M. Gopi, "Undistorting Foreground Objects in Wide Angle Images", *International Symposium on Multimedia*, 2013 [25% acceptance].
- C36. Il-Seok Oh, Jinseon Lee, Aditi Majumder, "Multi-scale Image Segmentation Using MSER", *Computer Analysis of Images and Patterns (CAIP)*, pp. 201-208, August 2013 [26% acceptance].
- C35. Behzad Sajadi, Duy-Quoc Lai, Alexander Iher, M. Gopi, Aditi Majumder, "Image Enhancement in Projectors Via Optical Pixel Shift and Overlay", *International Conference on Computational Photography (ICCP)*, pp. 1-10, April 2013 [25% acceptance].
- C34. Sangwon Chen, M. Gopi, Aditi Majumder, "HD-GraphViz: Highly Distributed Graph Visualization on Tiled Displays", *Indian Conference on Vision, Graphics and Image Processing (ICVGIP)*, , article 43, December 2012 [30% acceptance].
- C33. Kiarash Amiri, Shih-Hsien Yang, Fadi Kurdahi, Magda El Zarki, Aditi Majumder,

- "Collaborative Video Playback on a Federation of Tiled Mobile Projectors enabled by Visual Feedback", *ACM Multimedia Systems*, pp. 113-118, 2012 [30% acceptance].
- C32. Kiarash Amiri, Shih-Hsien Yang, Fadi Kurdahi, Magda El-Zarki, Aditi Majumder, Camera Based Video Synchronization for a Federation of Mobile Projectors, *IEEE/ACM Workshop on Projector Camera Systems*, pp. 44-51, June 2011 [30% acceptance].
- C31. Koel Das, Monica Siegenthaler, Aditi Majumder, Hans Keirstead, M. Gopi, "Automated Analysis of Remyelination Therapy for Spinal Cord Injury", *International Conference on Computer Vision, Graphics and Image Processing*, pp. 314-321, December 2010 [27% acceptance].
- C30. Behzad Sajadi, Aditi Majumder, "Automatic Registration of Multiple Projectors on Swept Surfaces", *ACM Virtual Reality and Software Technology, Hong Kong*, pp. 159-166, November 2010 [25% acceptance].
- C29. Behzad Sajadi, Maxim Lazarov, Aditi Majumder, "ADICT: Accurate Direct and Inverse Color Transformation", *European Conference on Computer Vision (ECCV), Crete, Greece, Lecture Notes on Computer Science*, vol. 6314, pp. 72-86, September 2010 [27% acceptance].
- C28. Aditi Majumder, Robert G. Brown, Hussein S. El-Ghoroury, "Display Gamut Reshaping for Color Emulation and Balancing", *IEEE/ACM Workshop on Projector-Camera Systems, San Francisco*, pp. 17-24, June 2010, **Best Paper Award** [33% acceptance].
- C27. Maxim Lazarov, Aditi Majumder, "Device-Independent Representation of Photometric Properties of a Camera", *IEEE/ACM Workshop on Projector-Camera Systems, San Francisco*, pp. 41-48, June 2010 [33% acceptance].
- C26. Behzad Sajadi, Aditi Majumder, "Auto-Calibration of Cylindrical Multi-Projector Systems", *Proceedings of IEEE Virtual Reality, Waltham, MA, March 2010*, pp. 155-162, **Best Paper Award** [25% acceptance].
- C25. Maxim Lazarov, Hamed Pirsiavash, Behzad Sajadi, Uddipan Mukherjee, Aditi Majumder, "Data Handling Displays", *IEEE/ACM Workshop on Projector Camera Systems, Miami, FL*, pp. 24-30, June 2009, [33% acceptance].
- C24. Behzad Sajadi, Aditi Majumder, "P-35:Maintaining Color Consistency Across Non-Linear Devices," *SID Symposium Digest of Technical Papers*, 40(1), pp. 1220-1222, San Antonio, TX, May 2009.
- C23. Hamed Pirsiavash, Vivek Singh, Aditi Majumder, Ramesh Jain, "Shared Visualization Spaces for Environment to Environment Communication", *Workshop on Media Arts, Science, and Technology (MAST), Santa Barbara, CA, Jan 2009*.
- C22. Ezekiel Bhasker, Ray Juang, Aditi Majumder, "Advances Towards Next Generation Flexible Multi-Projector Displays", *ACM Siggraph Workshop on Emerging Display Technologies, San Diego*, article 11, August, 2007.
- C21. Ezekiel Bhasker, Aditi Majumder, "Geometric Modeling and Calibration of Planar Multi-Projector Displays Using Rational Bezier Patches", *IEEE CVPR Workshop on Projector Camera Systems* pp. 1-8,, Minneapolis, Minnesota, June 2007 [40% acceptance].
- C20. Ray Juang, Aditi Majumder, "Photometric Self-Calibration of a Projector-Camera System", *IEEE CVPR Workshop on Projector Camera Systems*, pp. 1-8, Minneapolis, Minnesota, June 2007 [40% acceptance].
- C19. Ezekiel Bhasker, Aditi Majumder, " Self Calibrating Tiled Displays", *SID Symposium Digest of Technical Papers*, 38(1), pp. 23-26, Long Beach, May, 2007 [ 13% acceptance]
- C18. Pinaki Sinha, Ezekiel Bhasker, Aditi Majumder, "Mobile Display Via Distributed Networked Projector-Camera Systems", *IEEE CVPR Workshop on Projector Camera Systems, New York*, June 2006 [ 30% acceptance].
- C17. Aditi Majumder, Sandra Irani "Contrast Enhancement of Images Using Human Contrast Sensitivity" *ACM Symposium on Applied Perception in Graphics and Visualization*, pp 69-76, Boston, July 2006 [35% acceptance].
- C16. Aditi Majumder, "Luminance Management for Seamless Multi-Projector Displays", *SID Symposium Digest of Technical Papers, Volume 36, Issue 1, pages 1506-1509, Boston, May 2005* [10% acceptance].

- C15. Kartic Subr, Aditi Majumder, Sandra Irani, "Greedy Algorithm for Local Contrast Enhancement of Images", *International Conference on Image Analysis and Processing (ICIAP)*, pp 171-179, Cagliari, Italy, September, 2005 [15% acceptance].
- C14. Aditi Majumder, "Contrast Enhancement of Multi-Displays Using Human Contrast Sensitivity", *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR)*, pp 377-382, San Diego, June, 2005. [16% acceptance]
- C13. Aditi Majumder, "Is Spatial Super-Resolution Feasible with Multiple Overlapping Projectors?", *Proceedings of IEEE International Conference on Audio, Speech and Signal Processing (ICASSP)*, Vol. 4 pp 209-212, Philadelphia, 2005. [27% acceptance]
- C12. Aditi Majumder, "Camera Based Evaluation of Photometric Compensation Methods on Multi-Projector Displays", *Proceedings of IEEE International Conference on Image Processing*, pp 3527-3530, Singapore, 2004 [25% acceptance].
- C11. Michael S. Brown, Aditi Majumder, Ruigang Yang, "Camera Based Calibration Techniques for Seamless Multi-Projector Displays", *Applications of Computer Vision Workshop, Proceedings of European Conference of Computer Vision*, 2004. [40% acceptance]
- C10. Aditi Majumder, David Jones, Matthew McCrory, Michael E Papka, Rick Stevens, "Using a Camera to Capture and Correct Spatial Photometric Variation in Multi-Projector Displays", *IEEE International Workshop on Projector-Camera Systems*, 2003 [33% acceptance].
- C9. Andrew Raij, Gennette Gill, Aditi Majumder, Herman Towles, Henry Fuchs, "PixelFlex2: A Comprehensive, Automatic, Casually-Aligned Multi-Projector Display" *IEEE International Workshop on Projector-Camera Systems*, 2003 [33% acceptance].
- C8. Aditi Majumder and Rick Stevens, "Photometrically Continuous Imagery in Reconfigurable Large Area Displays", *3rd Annual High Information Content Display System Symposium*, 2003 [25% acceptance].
- C7. Aditi Majumder and Rick Stevens, "LAM: Luminance Attenuation Map for Photometric Uniformity Across Projection Based Displays", *ACM Virtual Reality Software and Technology*, pp 147-154, 2002 [25% acceptance]
- C6. Justin Binns, Gennette Gill, Mark Hereld, David Jones, Ivan Judson, Ti Leggett, Aditi Majumder, Matthew McCroy, Michael E. Papka, and Rick Stevens, "Applying Geometry and Color Correction to Tiled Display Walls" (Poster), *IEEE Visualization*, 2002 [40% acceptance].
- C5. Aditi Majumder, "Properties of Color Variation Across Multi-Projector Display", *SID Eurodisplay Digest*, pp 807-810, Nice, France, July, 2002 [30% acceptance].
- C4. Aditi Majumder and M. Gopi, "Real Time Charcoal Rendering Using Contrast Enhancement Operators", *Symposium of Non Photorealistic Animation and Rendering*, pp 59-66, Annecy, France, June, 2002 [45% acceptance].
- C3. Aditi Majumder and Greg Welch, "Computer Graphics Optique: Optical Superposition of Projected Computer Graphics", *Eurographics Workshop on Virtual Environments/ Immersive Projection Technology Stuttgart, Germany*, May 2001. [40% acceptance]
- C2. Aditi Majumder, Zhu He, Herman Towles and Greg Welch, "Achieving Color Uniformity Across Multi-Projector Displays", *IEEE Visualization*, pp 117-124, Salt Lake City, October, 2000. [34% acceptance]
- C1. Aditi Majumder, M. Gopi, Brent W. Seales and Henry Fuchs, "Geometric Stitching for Real-Time Panoramic Image Generation Using Texture Maps", *ACM Multimedia*, pp 169-178, Orlando, October, 1999 [18% acceptance].

#### **Peer-Reviewed System Demonstrations**

- D4. Aditi Majumder, Duy Quoc-Lai, Mahdi Abbaspour Tehrani, "A Multi-Projector Display System of Arbitrary Shape, Size and Resolution", *Emerging Technologies, ACM Siggraph*, 2015.
- D3. Aditi Majumder, Duy Quoc-Lai, Mahdi Abbaspour Tehrani, "A Multi-Projector Display System of Arbitrary Shape, Size and Resolution", *IEEE Virtual Reality*, 2015.

- D2. Kiarash Amiri, Shih-Hsien Yang, Magda El-Zarki, Fadi Kurdahi, Aditi Majumder, "Camera-based Video Synchronization for a Federation of Mobile Projectors", *IEEE International Conference on Multimedia and Expo*, 2011.
- D1. Jakub Segen, Aditi Majumder, Senthil Kumar and Joshua Gluckman, "Virtual Music and Dance Controlled by the Gestures of a Human Conductor", *Emerging Technologies*, ACM SIGGRAPH 1999.

#### Technical Reports

- T3. Ray Juang, Maxim Lazarov, Aditi Majumder, "Efficient Estimation and Device-Independent Representation of Photometric Properties of a Projector-Camera Pair", *Technical Report UCI*, 08-11, 2008
- T2. Behzad Sajadi, Aditi Majumder, "Smoothing Spatial Chrominance Variation Across Tiled Displays", *Technical Report UCI*, 08-04, 2008
- T1. Aditi Majumder, Robert Brown, Hussein El Ghoroury "Display Gamut Reshaping for Color Emulation and Balancing", *Technical Report UCI* 08-04, 2008

#### Patents/Artifacts

- P12. Aditi Majumder and M. Gopi, "Multi-Spectral Video Display and Camera", UC Patent Provisional (UC Case No. 2015-513-1).
- P11. Behzad Sajadi, Aditi Majumder, "Automatic Registration of Multiple Projectors on a Dome or Partial Dome", US Patent Provisional (UC Case No. 2012-133-2).
- P10. Aditi Majumder, Kiarash Amiri, Shih-Hsien Yang, Magda El Zarki, Fadi Kurdahi, "Video frame synchronization for a federation of projectors using camera feedback", United States Patent 9,218,061, December 2015.
- P9. Behzad Sajadi, Aditi Majumder, M. Gopi, "A Projector with Enhanced Resolution Via Optical Pixel Sharing", United States Patent 9,183,771, November 2015.
- P8. Behzad Sajadi, Aditi Majumder, "Markerless Geometric Registration Of Multiple Projectors (With Or Without Distortions) On Cylindrical And Other Extruded Surfaces Using An Uncalibrated Camera", United States Patent 9,195,121, November 2015.
- P7. Aditi Majumder, M. Gopi, Behzad Sajadi, "Color Seamlessness in Tiled Displays", United States Patent 9,052,584, June 2015.
- P6. Behzad Sajadi, Aditi Majumder, "Augmented Reality Using Projector Camera Enabled Devices" United States Patent 9,064,312, June 2015.
- P5. Aditi Majumder, "Scalable distributed/cooperative/collaborative paradigm for multi-user interaction with projection-based display walls", United States Patent 8,872,799, October, 2015.
- P4. Hussein El-Ghoroury, Aditi Majumder, Robert G. Brown, " Hierarchical multicolor primaries temporal multiplexing system", United States Patent 8,098,265, January 2012.
- P3. Aditi Majumder, Ezekiel Bhasker and Pinaki Sinha, "Apparatus and Method for Self Calibrating Multi-Projector Displays Via Plug and Play Projectors", United States Patent 7,942,530, May 2011.
- P2. Aditi Majumder and Rick Stevens, "Method to Smooth Photometric Variation Across Multi-Projector Displays", United States Patent 7,038,727, May 2006.
- P1. Aditi Majumder and Rick Stevens, "Optimal Luminance Smoothing to Achieve Color Seamlessness in Tiled Displays", Software artifact, Copyright June 10, 2005 (ANL software report ANL-SF-02-053)

#### Awards

- A13. *IEEE Service Award for Hosting IEEE VR 2012*, 2013.
- A12. *nVidia Academic Partner Award*, 2011.
- A11. *CUDA Teaching Center* recognition for ICS from nVidia, 2011
- A10. *Midcareer Research Award*, 2011, ICS, UCI.
- A9. *Best Paper Award*, June, 2010, IEEE/ACM Workshop on Projector Camera Systems.
- A8. *Best Paper Award*, March, 2010, IEEE Virtual Reality.
- A7. *Faculty Research Incentive Award*, 2009, ICS, UCI.
- A6. *Runner Up for Best Paper Award*, October, 2009, IEEE Visualization.
- A5. *NSF CAREER Award*, 2009.

- A4. *Young Scientist of the Year*, 2002, Argonne National Laboratory.
- A3. *Wallace Givens Fellow*, Summer 2001, Argonne National Laboratory.
- A2. *Link Fellow*, 2000 – 2001.
- A1. *Jagadish Bose National Science Talent Scholar (JBNSTS)*, India, 1992 – 1996.

**Professional Articles**

*Face of Calit2*, Calit2 Interface Magazine, Spring 2016.  
*A Wave of Hand*, Calit2 Interface Magazine, Spring 2012.  
*Attendance Up at IEEE Computer Society VR Conference*, IEEE Computer Society News, 13 March, 2012.  
*Visualizing the Future*, ACM Tech News, 13 Oct, 2011.  
*Visualizing the Future*, Feature Panorama on UCI main website, October 2011.  
*CAREER Grant to Fund Ubiquitous Displays*, Calit2 Newsroom, October 2009.  
*Coming Together At The Seams: Picture Perfect Projection*, Calit2 Interface Magazine, Winter 2007.

**Invited Talks**

Army Research Laboratories, Adelphi and Aberdeen Proving Ground, Sep, 2016  
 Keynote Speaker, International Symposium on Multimedia, Anaheim, California, Dec 2013.  
 Keynote Speaker, Brazilian Symposium on Virtual Reality, Rio de Janerio, May 2012.  
 Google, Mountain View, Oct 2011.  
 HP Research, Palo Alto, Oct 2011.  
 nVidia, Santa Clara, October 2011.  
 Keynote Speaker, International Symposium on Visual Computing, Las Vegas, Dec 2010.  
 Local IEEE Chapter, San Diego, Nov 2010.  
 Qualcomm, San Diego, Nov 2010.  
 Johannes Kepler University, Department of Computer Science, Linz, Austria, May 2010.  
 National University of Singapore, Computer Science Department, Singapore, Sep 2009  
 University of California – Los Angeles, Department of Computer Science, Oct 2008  
 Rochester Institute of Technology, Munsell Color Science Laboratory, Center for Imaging Science, Sep 2008  
 Yale University, Computer Science Department, Sep 2008  
 University of Utah, Scientific Computing and Imaging Institute, Sep 2008  
 University of California, Davis, SciDAC Institute for Ultrascale Visualization, Jun 2008  
 Northwestern University, EECS Department, May 2008  
 University of Maryland at College Park, Computer Science Dept, May 2008  
 Purdue University, Computer Science Dept, May, 2008  
 Jadavpur University, Kolkata, India, Dec 27, 2007.  
 MIT Media Labs, Cambridge, May 27, 2005.  
 Mitsubishi Electric Research Laboratory (MERL), Cambridge, May 27, 2005.  
 MICS Seminar at Department of Energy (DOE), Washington DC, Feb 25, 2004  
 University of Maryland at College Park, Computer Science Dept, October 2003.  
 Surgical Simulation Center, Washington DC, October 2003.  
 Indian Institute of Technology (IIT), Kharagpur, India, October, 2003.

**Research Grants**

- G9. **Primary Investigator**, Army Research Lab Grant: Hardware and Software Framework for Real-time Large-Scale Data Analytics, 2016-2019, \$360,000. [Other Co-PIs: Chen Li]
- G8. **Sole Primary Investigator**, UCI-ICS CORCLR Travel Grant, 2014-2015, \$5200.
- G7. **Primary Investigator**, UCI CORCLR Multi-Investigator Grant, 2014-2015, \$10,000 [Other Co-PIs: Judith Sandhotz, Department of Education].
- G6. **Co-Primary Investigator**, NSF EAGER: REAQTIVE - Resource Aggregation and Quality Tradeoffs for Integration of Video projector Ensembles, 2010-2011, \$100,000 [Other Co-PIs: Magda El Zarki and Fadi Kurdahi].
- G5. **Sole Primary Investigator**, NSF CAREER AWARD: Ubiquitous Displays Via a Distributed Framework, 2009-2013, \$637,000.
- G4. **Sole Primary Investigator**, NSF SGER: Analysis of Solution Space for Achieving Ubiquitous Pixels, 2007-2008, \$70,000.
- G3. **Sole Primary Investigator**, UCI COLCLR Travel Grant, 2006-2007, \$3000.
- G2. **Sole Primary Investigator**, UCI COLCLR Travel Grant, 2005-2006, \$3000.
- G1. **Senior Investigator**, "An IT Infrastructure for Responding to the Unexpected", NSF 446617-21857, 2004-2009, \$1,801,590.



- Equipment Grants**
- F6. Primary Investigator, ICS Matching Equipment Grant for UCI CORCLR Multi-Investigator Grant, 2014-2015, \$5000.
  - F5. Instrumental role in **nVidia donation for CUDA Teaching Center Facility at ICS,UCI**, 2011, \$26,000 (46 GPUs and TA funds)
  - F4. **nVidia GPU donation**, 2011, \$16,000
  - F3. **Canon Projector Donation**, 2009, \$9,000
  - F2. **Epson Projector Donation**, 2008, \$9,600
  - F1. **Canon Camera Donation**, 2008, \$2000
- Collaborations**
- I6. **Advisory Member**, Vortex Immersion, May 2012 - Present
  - I5. **Advisory Member**, Allosphere, UC-Santa Barbara, May 2012 - Present
  - I4. **Advisory Consultant**, Cubic Defense, Oct 2011 - Dec 2011
  - I3. **Advisory Consultant**, Disney Imagineering, Glendale, May 2009 - May 2010
  - I2. **Advisory Board Member**, Ostendo Technologies, Carlsbad, 2005 - 2008
  - I1. **Consultant**, Ostendo Technologies, Carlsbad, 2005 - 2007  
*Development of first multi-projector curved screen desktop, coming to market in 2009*  
<http://www.youtube.com/watch?v=3ndH8yPHopI>
- Professional Activities**
- Program Co-Chair**  
ACM SIGGRAPH International Conference on Virtual-Reality Continuum and its Applications in Industry, 2016.
- Associate Editor**  
Computer and Graphics, 2014 - 2016.
- Associate Editor**  
IEEE Computer Graphics and Applications, 2014 - Present.
- Guest Editor**  
Special Issue of IEEE Computer Graphics and Applications on Best Papers from ACM Virtual Reality Software and Technology, 2014.
- Program Co-Chair**  
ACM Virtual Reality Software and Technology, Edinburgh, UK, November, 2014.
- Program Co-Chair**  
VISTech: Workshop on Visualization Infrastructure Systems and Technology, SuperComputing, 2013 and 2014.
- Guest Editor**  
Special Section of Computer and Graphics on Advanced Displays, 2013.
- Guest Editor**  
Special Issue of IEEE Transactions on Visualization and Computer Graphics on Best Papers from IEEE Virtual Reality, 18(7), 2012.
- General Co-Chair**  
IEEE Virtual Reality (VR), Orange County, 2012.
- Program Co-Chair**  
IEEE Virtual Reality (VR), Singapore, March, 2011.
- Program Chair**  
IEEE/ACM Workshop on Projector Camera Systems (PROCAMS), Miami, June 2009.
- General Co-Chair**  
ACM Virtual Reality Software and Technology (VRST), Irvine, November 2007.
- Program Co-Chair**  
IEEE CVPR Workshop on Projector Camera Systems (PROCAMS), San Diego, June, 2005.
- Session Chair**  
IEEE CVPR Workshop on Projector Camera Systems (PROCAMS), June, 2007.  
IEEE CVPR Workshop on Projector Camera Systems (PROCAMS), June, 2006.
- Panels**

NSF CISE Research Initiation Initiative (CRII) Panel, December, 2014.  
NSF Computer Graphics and Visualization (CGV) Panel, March, 2014.  
NSF SBIR/STTR Phase I Panel, Photonic and Optical Systems, August 2013.  
NSF CAREER Award Panel, IIS, April, 2008.

#### **Program Committe**

ACM Virtual Reality Software and Technology, 2012-2016.  
European Conference on Computer Vision (ECCV), 2016  
Eurographics, 2015  
International Conference on Computational Photography (ICCP), April, 2014  
IEEE Visualization, October, 2011.  
IEEE Virtual Reality, March 2011-2016.  
IEEE/ACM SIGGRAPH Workshop on Projector Camera Systems (PROCAMS), June, 2010  
IEEE/ACM SIGGRAPH Workshop on Projector Camera Systems (PROCAMS), June, 2009  
IEEE/ACM SIGGRAPH Workshop on Projector Camera Systems (PROCAMS), August, 2008  
ACM Virtual Reality Software and Technology, Irvine, November 2007  
IEEE CVPR Workshop on Projector Camera Systems (PROCAMS), June, 2007  
IEEE CVPR Workshop on Projector Camera Systems (PROCAMS), June, 2006  
IEEE CVPR Workshop on Projector Camera Systems (PROCAMS), June, 2005

#### **Reviewer**

ACM Transactions on Graphics (TOG)  
IEEE Transactions on Visualization and Computer Graphics (TVCG)  
IEEE Computer Graphics and Application  
IEEE Computer Vision and Pattern Recognition (CVPR)  
IEEE Pattern Analysis and Machine Intelligence  
Journal of Electronic Imaging  
International Journal of Image and Graphics  
Eurographics  
Computer Graphics Forum  
Eurographics Symposium on Rendering  
ACM Siggraph  
ACM Siggraph Asia  
IEEE Visualization  
ACM Symposium on User Interface Software and Technology  
International Journal of Computer Vision  
IEEE and ACM International Symposium on Mixed and Augmented Reality  
ACM Non-Photorealistic Animation and Rendering  
IEEE Virtual Reality  
IEEE Virtual Reality Software and Technology  
ACM User Interface Software and Technology  
Journal of Computer Aided Geometric Design  
Indian Conference on Vision, Graphics and Image Processing  
Pacific Visualization  
Journal of Visual Computer  
IEEE Visweek  
ACM Transactions on Applied Perception  
Sensors

#### **Service to**

**Equity Advisor** for School of Information and Computer Science, 2016- Present  
**Member** of Council on Undergraduate Admissions and Relations with Schools (CUARS), Fall 2013 - Present  
**Member** of Midcareer Initiative Nomination Committee, Winter 2016.  
**Member** of Systems Recruitment Committee, Spring 2015.  
**Director** of Visualization Lab, CalIT2, Fall 2010 - Present  
**Member** of Visualization Lab, CalIT2, Inception - Fall 2010  
**Member** of CalIT2 Divisional Council, 2010 - Present  
**Member** of Student Outreach, Access and Retention Committee, ICS, 2010  
**Member** of Faculty Recruitment Committee, CS, 2007  
**Member** of Graduate Admissions Committee, CS, 2006 – 2008, 2010, 2011  
**Member** of Self Supporting MS Evaluation Committee, 2012

#### **Demos and Presentations of the iGravi Laboratory**

Hosting of Army Research Lab visit, 2016.  
Hosting Open House at iGravi during IEEE VR 2012 (450 attendees)

Faculty Candidates, 2007  
Video Presentation during Dedication Day of Bren Hall, 2007  
Candidates Day, ICS, 2006  
Several academic/industry visitors hosted by Calit2, OTA, ICS and Self including Disney, Boeing, Epson, Canon, Cubic Defence, Vortex Immersion

**New Course Development**  
Undergraduate Course on Digital Image Processing (CS 111)  
Graduate Course on Visual Computing (CS 211A)  
Graduate Course on Visual Perception (CS 213)

**Advisory Activities**  
**PhD Students Graduated**  
Duy Quoc Lai - (PhD - Fall 2015) - HiperWall  
Behzad Sajadi - (PhD - Summer 2012) - D. E. Shaw and Associates

**Current Graduate Advisees**  
Hung Nguyen (2014 – Present)  
Mehdi Rahimzadeh (2014- Present)  
Hao Zhang (2014 - Present)  
Mahdi Abbaspour Tehrani (2012 – Present)

**Masters Students Graduated**  
Duy Quoc-Lai (MS - Spring 2011) – UCI PhD Student  
Maxim Lazarov (M.S. - Summer 2010) – Dreamworks Animations  
Pablo Roman (M.S. - Spring 2010) – Kyoto University, PhD Student  
Mitsunubo Sugimoto (M.S. - Spring 2009) – National Defense Academy, Japan  
Anna Diez (M.S. - Spring 2009)  
Ray Juang (M.S. - Summer 2007) – Google, USA

**PhD Dissertation Committee**  
Mohsen Hejarati - (Winter 2015)  
Sangwon Chae - (Spring 2012)  
Kiarash Amiri - (Spring 2012)  
Shih Hsien Yang - (Spring 2012)  
Tien Bau - (Winter 2011)  
Don Black - (Summer 2009)  
Pablo Diaz Gutierrez (Spring 2008)

**PhD Candidacy Committee**  
Jia Chen (2016)  
Nitin Agrawal (2016)  
Duy Quoc-Lai (2013)  
Mohsen Hejarati (2013)  
Benjamin Koehne (2012)  
Sangwon Chae (2011)  
Kiarash Amiri (2011)  
Shih-Tsien Yang (2011)  
Shan Jiang (2010)  
Uddipan Mukherjee (2010)  
Hamed Pirsivash (2009)  
Ish Rishabh (2009)  
Tien Bau (2008)  
Gautam Chaudhary (EECS) (2007)  
Koel Das (EECS) (2007)  
Vidya Balasubramanian (2006)  
Pablo Diaz-Gutierrez (ICS) (2006)  
Kartic Subr (ICS) (2006)

**Masters Thesis Committee**  
Ish Rishabh (2009)  
Ishwar Kulkarni (2011)  
Shanaz Mistry (2012)  
Mathew Cherian Carathedathu (2012)

**Past Graduate Student Mentorship**  
Sridevi Maharaj (2011-2012)  
Golnaz Ghasi (2011-2012)

Uddipan Mukherjee (2008 - 2009)  
Ankit Gupta (2008 - 2009)  
Ezekiel Bhasker (2006 - 2007)  
Pinaki Sinha (2005 - 2006)

**Undergraduate Student Advisee**

Jessica Souza (2015-2016)  
Michelle Lim (2015-2016) (SURP Awardee for Summer 2015)  
Kitty Ho (2009-2010) – Rockwell Collins  
Christopher Larsen (2009 - 2010) – Western Digital  
Jason Kim (2004 - 2005) – Pixar Animations  
Christopher Larson (SURF-IT fellowship for summer 2006)  
Maxim Lazarov (SURP awardee for summer 2007, 2007- 2008),  
**Best UROP Project Award for 2008 - MS, UCI**

**Self-Funded Visiting Scholars**

Bo Yan (Visiting Professor) - Fudan University, Shanghai, China (2015-2016)  
Lin Min (Visiting Professor) - University of Shanghai for Science and Technology, China (2015-2016)  
Yuqi Li (PhD Student) - Zhejiang University, China (2014-2015)  
Il Seok-Oh (Professor) - Chonbuk National University, Korea (2011-2012)  
Gustavo Pereira (UG Student) - Universidade Federal Rural de Pernambuco, Brazil (2014 summer)  
Kamilla Kemilly Tenorio Alves Dos Santos (UG Student), Universidade Federal de Alagoas, Brazil (2014 summer)