

# CURRICULUM VITAE

## JIAN CHEN

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*I study interdisciplinary science of visualization and 3D interaction in virtual reality.*

My web-home: <http://www.cse.ohio-state.edu/~chen.8028>

My Google scholar citations: <https://scholar.google.com/citations?user=9R1aERQAAAAJ&hl=en>.

## EDUCATION

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- Brown University, Computer Science and BioMed, postdoc
- Virginia Tech, Computer Science, PhD
  - *Design and Evaluation of Domain-Specific Interaction Techniques in the AEC Domain for Immersive Virtual Environments, Advisor: Doug A. Bowman*
- University of Houston, Computer Science, MS
  - *A Virtual Environment System for the Comparative Study of DOME and HMD, Advisor: R. Bowen Loftin*
- Tianjin University / Tsinghua University (joint program), Mechanical Engineering / Precision Instruments and Mechanology, MS
  - *A Method for Synthesizing Images Captured from Multiple Viewpoints, Advisors: Da Lu and Lanfeng Sun*

## EXPERIENCE

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- 2018-, The Ohio State University, Association Professor (with tenure), Computer Science and Engineering
- 2017-2018, The Ohio State University, Assistant Prof. (tenure-track), Computer Science and Engineering
- 2017, Harvard University, Visiting Researcher
- 2012-2017, University of Maryland, Baltimore County (UMBC), Asst. Prof. (tenure-track), Computer Science and Electrical Engineering (*tenure-clock was reset.*)
- 2009-2012, University of Southern Mississippi (USM), Asst. Prof. (tenure-track), School of computing
- 2006-2009, Brown University, Research associate, Computer Science and BioMed
- 2002-2006, Virginia Tech, Research and teaching assistants, Computer Science
- 1999-2002, University of Houston, Research assistant, Computer Science / Virtual Environment Research Institute (VERI)
- 1999, Great Dragon Telecomm Co., Beijing, China, Senior Engineer. (I was the project manager for a project funded by the five-year plans of China.)

## CAREER-LIFE BALANCE

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- Maternity leave: 2015F (Jerry was born on Aug. 20 2015. *He breaks my heart every day!*)
- Maternity leave: 2014S (Tenure-clock stopped by a year. Andre was born on Feb. 4 2014.)

## HONORS RECEIVED

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- UMBC Innovation Fellow, January 2016 - August 2017
- UMBC Provost Teacher Scholar, 2015
- Best paper award: honorable mention (on physiology data visualization), BioVis, 2013
- Best poster award (on navigation techniques for geoscience data visualization), ACM I3D, 2009
- Center for Vision Research fellowship (on visualization theory), Brown University, 2008-2009
- Best poster candidate (on multiple layer visualization), IEEE Visualization, 2007
- Fellowship, Brown University Vision Science, 2007

- Best paper award (on multiple-view information visualization), Human Factor and Ergonomics Society (HFES) Annual Meeting, 2003
- Member, Upsilon Pi Epsilon (Computer Science Honorary Society), inducted in 2002
- Graduate student fellowship, University of Houston, 2000-2002
- National Challenge Cup Winner (2nd place, among all college students in China on excellence in mechanical engineering design), 1999

## Grants

*I have secured 15 awards from NSF, NIST, and DoD that total \$3.7 million. Of this amount, \$1.9 million are under my direct supervision. I have successfully collaborated with colleagues in biology, biomedicine, neurology, physics, electronic health records studies, and engineering.*

### HIGHLY COMPETITIVE RESEARCH AND INFRASTRUCTURE AWARDS

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- **(Sole-PI) NIST MSE-70NANB13H181: *Understanding Immersive Metrology Datasets: Scientific and Information Visualization Integration and Hybrid Input*, 9/1/2013-4/30/2019, Jian Chen, **Responsible: \$438,613 of \$438,613** (1 graduate student).**
- **(PI) NSF CNS-1531491 (Major Research Infrastructure Award): *Acquisition of  $\pi^2$ : a CAVE2-Inspired Display for Discovery Science, Creativity, and Education*, 8/1/2015-7/31/2018, Jian Chen, Penny Rheingans, Michael Summers, Craig Saper, and Karl V. Steiner, **\$360,000** (from NSF) + **\$154,285** match from UMBC = **\$514,285**.**
- **(Participating-PI) DoD USAMRAA-13318046 (through the Geneva Foundation): *An Interactive Visualization Framework to Support Exploration and Analysis of TBI/PTSD Clinical Data*, 4/1/2015-7/31/2017, Jesus Caban, Gerard Riedy, Joseph Bleiberg, and Jian Chen, **Responsible: \$264,217 of \$452,335** (1 graduate student).**
- **(Site-PI) NSF DBI-1260795: *ABI Development: PathBubbles for Dynamic Visualization and Integration of Biological Information*, 7/1/2012-6/30/2016, Carl J. Schmidt (PI, Biology, University of Delaware), Cecilia N. Arighi (Biology, U of Delaware), Vijay K. Shanker (Biology, U of Delaware), Fiona M. McCarthy (Basic Sciences, Arizona State University), Jian Chen, **Responsible: \$400,007 of \$1,043,110** (1 postdoc and 1 graduate student).**
- **(Lead-PI) NSF IIS-1018769 / 1302755: *Supporting Knowledge Discovery Through a 3D Scientific Visualization Language*, 11/1/2010-10/31/2015, Jian Chen, David H. Laidlaw (CS, Brown), and Alexander P. Auchus (Neurology, University of Mississippi Medical Center), **Responsible: \$205,001 of \$499,573** (2 graduate students).**
- **(Co-PI) NSF DBI-1062057: *RCN-UBE INCUBATOR: Visual Analytics in Biology Curriculum Network*, 4/11/2011-4/10/2012, Raphael D. Isokpehi (PI, Biology, JSU), Susan Bridges (CS, MSU), Hari H. Cohly (Biology, JSU), Edu B. Suarez-Martinez (Biology, U of Michigan), and Jian Chen, **Responsible: \$0 of \$50,000**.**
- **(Co-PI) NSF DUE-0817106: *Integrating Web-Based Visualization with Structural Systems Understanding to Improve the Technical Education of Architects*, 8/1/2009-7/31/2012, Mehdi Setareh (PI, Architecture, Virginia Tech), Michael Ermann (BC, USC), Nicholas Polys (CS, Virginia Tech), Brett Jones (Architecture, Virginia Tech), and Jian Chen, **Responsible: \$0 of \$499,833**.**

### COMPETITIVE SUB-AWARD AND SEED-GRANTS BASED ON INTELLECTUAL MERITS

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- **(Sub-award) DHS: *Sport Security Training and Evacuation*, 5/2010-12/2010. PI: Lou Marciani, **\$30,000** (1 graduate student).**
- **(Sole-PI) NSF EPS-0903234 (seed grant through Mississippi State University): *Analysis and Visualization of Time-Varying Data for Optimizing Knowledge Discovery in Biology*, 9/1/2010-8/30/2012, Jian Chen, **\$69,138** (funding rate: 8%) (1 graduate student).**
- **(Sole-PI) NSF EPS-0903234 (seed grant through Mississippi State University): *Storytelling Bubbles: Integrating Symbolic Representation, Data Ink Manipulation, and Metaphorical Interface for Fluid Time-Varying Biological Data Analysis*, 9/1/2011-8/30/2013, Jian Chen, **\$35,979 of \$35,979** (funding rate: 8%) (1 graduate student).**

## NSF RESEARCH EXPERIENCES FOR UNDERGRADUATES (REU) AND WORKSHOP GRANT

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- **(Sole-PI) NSF CNS-1712831 (REU supplement for CNS-1531491)**, *Acquisition of  $\pi^2$ : a CAVE2-Inspired Display for Discovery Science, Creativity, and Education*, 8/1/2015-7/31/2018, Jian Chen, **Responsible: \$17,994** of \$17,994 (2 undergraduate students).
- **(Sole-PI) NSF IIS-1444644: Workshop: Doctoral Colloquium at IEEE VIS 2014**, 7/1/2014-6/30/2015, Jian Chen, **\$20,880** (doctoral student funds).
- **(Sole-PI) NSF DBI-1341352 (REU Supplement for DBI-1260795)**, *ABI Development: PathBubbles for Dynamic Visualization and Integration of Biological Information*, 6/1/2013-8/31/2016, Jian Chen, **Responsible: \$6,000** of \$6,000 (1 undergraduate student).
- **(Sole-PI) NSF IIS-1341254 (REU Supplement for IIS-1018769)**, *Supporting Knowledge Discovery Through a 3D Scientific Visualization Language*, 6/1/2013 – 8/31/2015, Jian Chen, **Responsible: \$12,946** (2 undergraduate students).
- **(Co-PI) NSF IIS-1341912: Workshop: Doctoral Colloquium at IEEE VIS 2013**, 7/1/2013-6/30/2014, Niklas Elmqvist, Remco Chang, and Jian Chen, **\$20,000** (doctoral student funds).

## UNIVERSITY SUPPORT AND FELLOWSHIPS

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- **(Co-PI) UMBC COEIT: Establishing an Integrated Experimental-Computational Pipeline for Predictive Modeling in Cancer Immunotherapy**, Gregory Szeto and Jian Chen, **\$40,000**. 2016-2018.
- **(PI) UMBC Hrabowski Fund for Innovation**, “*Virtual Reality Design for Science*”: *Integrating Research, Communication, and Learning for Interdisciplinary Training*, Jian Chen, Marc Olano, and Adam Bargteil, **\$24,598**.
- **(Sole-PI) UMBC Summer Faculty Fellowship**, *Understanding Casualty Graph Visualization for Knowledge Discovery in Human Physiology Modeling*, Jian Chen, 6/1/2013 – 8/31/2013, **\$6,000** of \$6,000.
- **(Sole-PI) USM: President Lucas Endorsement Award for Faculty Research Excellence**, *Analysis and Visualization of Time-Varying Data for Optimizing Knowledge Discovery in Biology*, Jian Chen, 10/18/2010-6/17/2011, **\$3,843** of \$3,843.

## DONATIONS

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- **\$50,000**, Next Century Co., 2016 (for immersive analytics).
- **\$5,000**, Nielsen Co., 2015 (for multivariate data visualization).

## Publications

*I have published in the two broad research areas of visualization (VIS) and virtual reality (VR). These two areas have their own journals and conferences. In VIS, IEEE Transactions on Visualization and Computer Graphics (TVCG) is the top journal and IEEE VIS is the top conference. In VR, the MIT Presence journal is the top journal and the IEEE Virtual Reality conference is the top conference (selected VR conference papers have been invited to IEEE TVCG in the last two years). Other high-quality venues include Information Visualization (journal), HFES conference, EuroVR, and EuroVis conferences. Some second-tier venues include PacificVis and VRST. Some recurring symposiums (e.g. BioVis and 3DUI) are also highly competitive. Papers in domain journals (e.g., Human brain mapping and BMC Bioinformatics) are highly cited.*

*Within VIS, I have published in all areas of information visualization (non-spatial), scientific visualization (spatial), and visual analytics.*

*Student names are underlined. I added asterisks\*\* to undergraduates and class project papers to demonstrate the quality of the teaching and my passion to integrate research and teaching.*

## JOURNAL ARTICLES

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### Published or Accepted

1. Chunyan Yu, Li-Chien Lee, Chein-I Chang, Bai Xue, Meiping Song, and Jian Chen, Band-Specified Virtual Dimensionality for Band Selection: An Orthogonal Subspace Projection Approach. *IEEE Transactions on Geoscience and Remote Sensing*, 56(5): 2822-2832, 2018. DOI: [10.1109/TGRS.2017.2784372](https://doi.org/10.1109/TGRS.2017.2784372).
2. Christopher Whelan, Neda Jahanshad, Derrek P Hibar, Julie Absil, Saud Alhusaini; Marina K Alvim; Pia Auvinen; Emanuele Bartolini; Bergo Bergo; Tauana Bernardes; Karen Blackmon, Barbara Braga; Maria E Caligiuri, Anna Calvo, Sarah J Carr, Jian Chen; Shuai Chen; Andrea Cherubini, Philippe David; Martin Domin; Sonya Foley, Wendy França; Gerrit Haaker, Dmitry Isaev; Simon S Keller, Raviteja Kotikalapudi; Magdalena A Kowalczyk, Ruben Kuzniecky, Soenke Langner, Matteo Lenge, Kelly M Leyden; Min Liu, Richard Q Loi; Pascal Martin, Mario Mascalchi, Marcia Morita; Jose C Pariente, Raul Rodríguez-Cruces, Christian Rummel, Taavi Saavalainen; Mira K Semmelroch; Maria Savina Severino, Rhys H Thomas, Manuela Tondelli; Domenico Tortora, Anna Elisabetta Vaudano, Lucy Vivash, Felix von Podewils, Jan Wagner, Bernd Weber, Yi Yao, Clarissa L Yasuda, Guohao Zhang, Nuria Bargalló, Benjamin Bender, Andrea Bernasconi, Neda Bernasconi, Boris C Bernhardt, Ingmar Blümcke, Chad Carlson; Gianpiero L Cavalleri, Fernando Cendes, Luis Concha, Norman Delanty, Chantal Depondt, Orrin Devinsky, Colin P Doherty, Niels K Focke, Antonio Gambardella, Renzo Guerrini, Khalid Hamandi, Graeme D Jackson, Reetta Kälviäinen, Peter Kochunov, Patrick Kwan, Angelo Labate, Carrie R. McDonald, Stefano Meletti, Terence J O'Brien, Mark P Richardson, Pasquale Striano, Thomas Thesen, Roland Wiest, Junsong Zhang, Paul M Thompson, and Sanjay M Sisodiya. Structural brain abnormalities in the common epilepsies assessed in a worldwide ENIGMA study. *Brain*, 141(2): 391-408, 2018. [IF: 10.292]. DOI: [10.1093/brain/awx341](https://doi.org/10.1093/brain/awx341).
3. Chein-I Chang, Li-Chien Lee, Bai Xue, Meiping Song, Jian Chen, Channel Capacity Approach to Hyperspectral Band Subset Selection, *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 10(10):4630-4644, 2017. [IF: 2.913]. DOI: [10.1109/JSTARS.2017.2724604](https://doi.org/10.1109/JSTARS.2017.2724604).
4. Sinead Kelly, Neda Jahanshad, Andrew Zalesky, Peter kochunov, Derrek Hibar, Jian Chen, Ingrid Agartz, Clara Alloza, Ole Andreassen, Celso Arango, Nerisa Banaj, Sylvain Bouix, Chad Bousman, Rachel Brouwer, Jason Bruggemann, Juan Bustillo, Wiepke Cahn, Vince Calhoun, Dara M Cannon, Vaughan Carr, Stanley Catts, Jing-xu Chen, Xing Chen, Chiara Chiapponi, Kang Ik K. Cho, Valentina Ciullo, Aiden Corvin, Benedicto Crespo-Facorro, Vanessa Croypley, Pietro De Rossi, Covadonga Diaz-Caneja, Erin Dickie, Nhat Trung Doan, Fengmei Fan, Joshua Faskowitz, Helena Fatouros-Bergman, Lena Flyckt, Judith Ford, Jean-Paul Fouche, Masaki Fukunaga, Michael Gill, David Glahn, Randy Gollub, Esther Goudzwaard, Hua Guo, Raquel Gur, Ruben Gur, Ryota Hashimoto, Sean Hatton, Frans Henskens, Ian Hickie, L. Elliot Hong, Jiri Horacek, Fleur Howells, Hilleke Hulshoff Pol, Craig Hyde, Dmitry Isaev, Thomas Whitford, Assen Jablensky, Philip Jansen, Joost Janssen, Erik Jonsson, René Kahn, Zora Kikinis, Liu Kirra, Paul Klauser, Christian Knöchel, Marek Kubicki, Jun Soo Kwon, Jim Lagopoulos, Carolyn Langen, Stephen Lawrie, Rhoshel Lenroot, Kelvin Lim, Carlos López-Jaramillo, Amanda Lyall, Vincent Magnotta, Rene Mandl, Daniel Mathalon, Robert McCarley, Simon McCarthy-Jones, Colm McDonald, Sarah McEwen, Andrew Mcintosh, Tomas Melicher, Raquelle Mesholam-Gately, Patricia Michie, Bryan Mowry, Bryon Mueller, Dominick Newell, Patricio O'Donnell, Viola Oertel, Lena Oestreich, Sara Paciga, Christos Pantelis, Ofer Pasternak, Godfrey Pearlson, Avril Pereira, Julien Pineda, Fabrizio Piras, Federica Piras, Steven Potkin, Adrian Preda, Paul Rasser, David Roalf, Roberto Roiz-Santiañez, Gaia Romana Pellicano, Annerine Roos, David Rotenberg, Theodore Satterthwaite, Peter Savadjiev, Ulrich Schall, Rodney Scott, Marc Seal, Larry Seidma, Cynthia Weickert, Martha Shenton, Gianfranco Spalletta, Filip Spaniel, Emma Sprooten, Michael Stäblein, Dan Stein, Suresh Sundram, Yun-Long Tan, Shuping Tan, Shiyu Tang, Henk Temmingh, Siren Tønnesen, Diana Tordesillas-Gutierrez, Jatin Vaidya, Neeltje van Haren, Cristian Vargas, Daniela Vecchio, Dennis Velakoulis, Aristotle Voineskos, James Voyvodic, Zhiren Wang, Ping Wang, Dong Wei, Thomas Weickert, Lars Tjelta Westlye, Heather Whalley, Tonya White, Joanne Wojcik, Hong Xiang, Zhiyong Xie, Hidenaga Yamamori, Fu-De Yang, Nailin Yao, Guohao Zhang, Jingjing Zhao, Theo van Erp, Jessica Turner, Stefan Ehrlich, Lukas Jung, Paul Thompson, and Gary Donohoe. Widespread white matter microstructural differences in schizophrenia across 4,375 individuals: results from the ENIGMA Schizophrenia DTI Working Group. *Molecular Psychiatry (The Nature Publishing Group)*, 23:1261-1269, 2018. [IF: 14.496]. DOI: [10.1038/mp.2017.170](https://doi.org/10.1038/mp.2017.170).
5. Petra Isenberg, Florian Heimerl, Steffen Koch, Tobias Isenberg, Panpan Xu, Chad Stolper, Michael Sedlmair, Jian Chen, Torsten Möller, and John Stasko. Vispubdata.org: A Metadata Collection About IEEE Visualization (VIS) Publications. *IEEE Transactions on Visualization and Computer Graphics*, 23(9): 2199-2206, 2017. [IF: 2.34]. DOI: [10.1109/TVCG.2016.2615308](https://doi.org/10.1109/TVCG.2016.2615308).
6. Henan Zhao, Garnett W. Bryant, Wesley Griffin, Judith E. Terrill, and Jian Chen. Validation of SplitVectors Encoding for Quantitative Visualization of Large-Magnitude-Range Vector Fields. *IEEE Transactions on*

- Visualization and Computer Graphics*, 23(6):1691-1705, 2017. [IF: 2.34]. DOI:[10.1109/TVCG.2016.2539949](https://doi.org/10.1109/TVCG.2016.2539949).
7. Petra Isenberg, Tobias Isenberg, Michael Sedlmair, Jian Chen, and Torsten Möller. Visualization as Seen Through Its Research Paper Keywords. *IEEE Transactions on Visualization and Computer Graphics*, 23(1): 771-780, 2017. DOI:[10.1109/TVCG.2016.2598827](https://doi.org/10.1109/TVCG.2016.2598827). (IEEE VIS/SciVis paper AR: 25%)
  8. Keqin Wu, Liang Sun, Carl Schmidt, and Jian Chen. Graph Query Algebra and Visual Proximity Rules for Biological Pathway Exploration. *Information Visualization*, 16(3): 217-231, 2017. [IF: 0.923]. DOI: [10.1177/1473871616666394](https://doi.org/10.1177/1473871616666394).
  9. Guohao Zhang, Peter Kochunov, Elliot Hong, Neda Jahanshad, Paul Thompson, Sinead Kelly, Chris Whelan, and Jian Chen. ENIGMA-Viewer: Interactive Visualization Strategies for Conveying Effect Sizes in Meta-Analysis. *BMC Bioinformatics*, 18:235, 2017 (13 pages). [IF: 2.448]. DOI: [10.1186/s12859-017-1634-8](https://doi.org/10.1186/s12859-017-1634-8).
  10. Liang Sun, Yongnan Zhu, A.S.M. Ashique Mahmood, Catalina O. Tudor, Jia Ren, K. Vijay-Shanker, Jian Chen, and Carl J. Schmidt, WebGIVI: A Web-based Gene Enrichment Analysis and Visualization Tool. *BMC Bioinformatics*, 18:237, 2017 (10 pages). [IF: 2.448]. DOI:[10.1186/s12859-017-1664-2](https://doi.org/10.1186/s12859-017-1664-2).
  11. Eric Ragan, Alex Endert, Jibonananda Sanyal, and Jian Chen. Characterizing Provenance in Visualization and Data Analysis: An Organizational Framework of Provenance Types and Purposes. *IEEE Transactions on Visualization and Computer Graphics*, 22(1):31-40, 2016. DOI:[10.1109/TVCG.2015.2467551](https://doi.org/10.1109/TVCG.2015.2467551). (IEEE VIS/VAST paper AR: 32%)
  12. Peter Kochunov, Habib Ganjgahi, Anderson Winkler, Sinead Kelly, Dinesh Shukla, Xiaoming Du, Neda Jahanshad, Laura Rowland, Hemalatha Sampath, Binish Patel, Patricio O'Donnell, Zhiyong Xie, Sara A. Paciga, Christian Schubert, Jian Chen, Guohao Zhang, Paul M. Thompson, Thomas E. Nichols, and L. Elliot Hong. Heterochronicity of White Matter Development and Aging and Vulnerability to Schizophrenia. *Human Brain Mapping*, 37(12): 4673-4688, 2016. [IF: 5.969]. DOI:[10.1002/hbm.23336](https://doi.org/10.1002/hbm.23336).
  13. Yongnan Zhu, Liang Sun, Alexander Garbarino, Carl Schmidt, Jinglong Fang, and Jian Chen. PathRings: A Web-Based Tool for Exploration of Orthologs and Expression Data in Biological Pathways. *BMC Bioinformatics*, 16:165 (7 pages), 2015. (<https://github.com/ivcl/PathRings>). [IF: 2.67]. DOI:[10.1186/s12859-015-0585-1](https://doi.org/10.1186/s12859-015-0585-1).
  14. Meng Ling and Jian Chen. Environmental Visual Imagery: Applications to Site Characterization, Remedial Programs and Litigation Support. *Environmental Earth Sciences, Environmental Earth Sciences (EES)*, 72(10):3839-3846, 2014. [IF: 1.572]. DOI:[10.1007/s12665-014-3220-y](https://doi.org/10.1007/s12665-014-3220-y).
  15. Yubao Wu, X. Zhu, Jian Chen, and Xiang Zhang. EINVis: A Visualization Tool for Analyzing and Exploring Genetic Interactions in Large-Scale Association Studies. *BMC Genetics Software*, 37(7):675-685, 2013. [IF: 2.36]. [[Vis weblink](#)]. DOI:[10.1002/gepi.21754](https://doi.org/10.1002/gepi.21754).
  16. Tobias Isenberg, Petra Isenberg, Jian Chen, Michael Sedlmair, and Torsten Möller. A Systematic Review on the Practice of Evaluating Visualization. *IEEE Transactions on Visualization and Computer Graphics*, 19(12): 2818-2827, 2013. DOI:[10.1109/TVCG.2013.126](https://doi.org/10.1109/TVCG.2013.126). (IEEE VIS/InfoVis paper AR: 25%)
  17. Jian Chen, Haipeng Cai, Alexander P. Auchus, and David H. Laidlaw. Effects of Stereo and Screen Size on the Legibility of Three-Dimensional Streamtube Visualizations. *IEEE Transactions on Visualization and Computer Graphics*, 18(12):2130-2139, 2012. DOI:[10.1109/TVCG.2012.216](https://doi.org/10.1109/TVCG.2012.216). (IEEE VIS/SciVis paper AR: 27%)
  18. Guosheng Hu, Zhigeng Pan, Mingmin Zhang, Ding Chen, Wanming Yang, and Jian Chen. An Interaction Toolkit for Generating Harmonious Color Schemes. *Color Research & Application*, 39(1):70-78, 2012. [IF: 0.934]. DOI:[10.1002/col.21762](https://doi.org/10.1002/col.21762).
  19. Andrew S. Forsberg, Jian Chen, and David H. Laidlaw. Comparing 3D Vector Field Visualization Methods: A User Study. *IEEE Transactions on Visualization and Computer Graphics*, 15(6): 1219-1226, 2009. [IF: 2.35]. DOI:[10.1109/TVCG.2009.126](https://doi.org/10.1109/TVCG.2009.126).
  20. Jian Chen and Doug A. Bowman. Domain-Specific Design of 3D Interaction Techniques: An Approach for Designing Useful Virtual Environment Applications. *Presence: Teleoperators and Virtual Environments*, MIT Press, 18(5): 370-386, 2009. [IF: 0.91] (**Front cover**). DOI:[10.1162/pres.18.5.370](https://doi.org/10.1162/pres.18.5.370).
  21. Daniel K. Riskin, David J. Willis, Joseph H. Iriarte-Díaz, L. Tyson, Misha Kostandov, Jian Chen, David H. Laidlaw, Kenny S. Breuer, and Sharon M. Swartz. Quantifying the Complexity of Bat Wing Kinematics. *Journal of Theoretical Biology*, 254: 604-615, 2008. DOI:[10.1016/j.jtbi.2008.06.011](https://doi.org/10.1016/j.jtbi.2008.06.011).

22. Doug A. Bowman, Jian Chen, Chad A. Wingrave, John Lucas, Andrew Ray, Nicholas F. Polys, Qing Li, Yonca Haciahmetoglu, Ji-Sun Kim, S-J Kim, Robert Boehringer, and Tao Ni. New Directions in 3D User Interfaces. *International Journal of Virtual Reality*, 5(2): 3-14, 2006. DOI: [10.1109/MCG.2008.109](https://doi.org/10.1109/MCG.2008.109).
23. Lanfeng Sun, Tianzheng Gao, Yan Liang, and Jian Chen. Study on the Method of Constructing Rational Cubic Curves and Curved Surface including Controlling Parameters. *Transactions of Tianjin University*, 4(1): 29-34, 1998. [[publisher's link](#)].
24. Jian Chen, Lanfeng Sun, and Da Lu. A Review of Virtual Reality. *Journal of Tianjin Institute of Textile Science and Technology*, 17(2): 91-96, 1998 (in Chinese) [[publisher's link](#)].
25. Lanfeng Sun, Jian Xu, Jian Chen, and Liangsheng Zhou. A Design Method of Variables for Parameterization Drafting Based on Shape Features. *Journal of Tianjin Institute of Textile Science and Technology*, 17(2): 32-36, 1998 (in Chinese) [[publisher's link](#)].

## CHAPTERS IN BOOKS

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1. Wolfgang Buschel, Jian Chen, Raimund Dachsel, Steven Drucker, Tim Dwyer, Carsten Gorg, Tobias Isenberg, Andreas Kerren, Chris North, and Wolfgang Stuerzlinger, Interaction for Immersive Analytics, *Immersive Analytics*, Springer, 103-146, 2018.
2. Kim Marriott, Jian Chen, Marcel Hlawatsch, Takayuki Itoh, Miguel Nacenta, Guido Reina, and Wolfgang Stuerzlinger, Time to Reconsider the Value of 3D for Information Visualization, Chapter 1 in *Immersive Analytics*. Springer, 35-64. 2018.
3. Kim Marriott, Jian Chen, Marcel Hlawatsch, Takayuki Itoh, Miguel Nacenta, Guido Reina, and Wolfgang Stuerzlinger, Just 5 questions: toward a design framework for immersive analytics, Chapter 10 in *Immersive Analytics* (eds. Tim Dwyer, Kim Marriott, Tobias Isenberg, Karsten Klein, Nathalie Riche, and Falk Schreiber). Springer, 265-290, 2018.
4. Jian Chen, Haipeng Cai, David H. Laidlaw, and Alexander P. Auchus. Gryphon: A 'Little' Domain-Specific Programming Language for Diffusion MRI Visualizations. In Huang, T (eds.), *Human-Centric Visualization: Theories, Methodologies, and Case Studies*, Springer, 41-61, 2014. DOI [10.1007/978-1-4614-7485-2](https://doi.org/10.1007/978-1-4614-7485-2).
5. Haipeng Cai, Jian Chen, Alexander Auchus, Stephen Correia, and David H. Laidlaw. InShape: In-Situ Shape-Based Interactive Multiple-View Exploration of Diffusion MRI Visualizations. *Lecture Notes in Computer Science* (also in International Symposium on Visual Computing), 706-715, 2012. DOI: [10.1007/978-3-642-33191-6\\_70](https://doi.org/10.1007/978-3-642-33191-6_70).
6. Jian Chen. A Hybrid Direct Visual Editing Method for Architectural Massing Study in Virtual Environments. In Wang, X. and Tsai, J. (eds.), *Collaborative Design in Virtual Environments*, Springer, 2010. DOI: [10.1007/978-94-007-0605-7\\_12](https://doi.org/10.1007/978-94-007-0605-7_12).

## CONFERENCE / WORKSHOP PAPERS

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1. Meng Ling, Jeff Johnson, Zhiqian Feng, and Jian Chen, How to Look at Data: Environmental Practitioners' Lens Through Two Case Studies, EuroVis 2018, EnvirVIS workshop, <https://www.informatik.uni-leipzig.de/bsv/envirvis2018/envirvis-2018/program>.
2. Mai Elshehaly, Gregory Szeto, Zhigeng Pan, and Jian Chen. *ImmunoExplorer: A Web-based Multivariate Visualization System for Exploratory Analysis of Immunotherapy*. International Conference on Virtual Reality and Visualization, Hangzhou, China, 2016.
3. Guohao Zhang, Peter Kochunov, Elliot Hong, Neda Jahanshad, Paul Thompson, and Jian Chen. *ENIGMA-Viewer: Interactive Visualization Strategies for Conveying Effect Sizes in Meta-Analysis*. ACM Conference on Bioinformatics, Computational Biology, and Health Informatics, Brain-KDD, California, October 2016. [[workshop website](#)][[Neuroimaging Informatics Tools and Resources Clearinghouse \(NITRC\) weblink](#)][[weblink for brain scientists to perform cohort analysis](#)]
4. Guohao Zhang, Peter Kochunov, Elliot Hong, Hamish Carr, and Jian Chen. *Towards Visual Mega-Analysis of Voxel-based Measurement in Brain Cohorts*. EuroVis short paper, June, 2016. DOI: [10.2312/eurovisshort.20161161](https://doi.org/10.2312/eurovisshort.20161161).
5. Alexander Garbarino\*\*, Zachary Garbarino\*\*, Liang Sun, Carl Schmidt, and Jian Chen. *VisGumbo, VisMirrors, VisCut: Interactive Narrative Strategies for Large Biological Pathway Comparisons*. IEEE VIS workshop on Exploring Graphs at Scale (EGAS), October 2015. (Student class project) [[weblink](#)][[paper link](#)]

6. [Keqin Wu](#), [Liang Sun](#), Carl Schmidt, and Jian Chen. *A Graph Query Algebra on Biological Pathways*. IEEE VIS workshop on Exploring Graphs at Scale (EGAS), October 2015. [[weblink](#)][[paper link](#)]
7. [Filip Dabek](#), Jian Chen, [Alexander Garbarino](#), and Jesus J. Caban. *Visualization of Longitudinal Clinical Trajectories Using a Graph-Based Approach*. IEEE VIS workshop on Visual Analytics in Healthcare, Chicago, October 2015. DOI: [10.1145/2836034.2836039](#).
8. [Haeyong Chung](#), Chris North, [Joshi Sarang](#), and Jian Chen. *Four Considerations for Supporting Visual Analysis in Display Ecologies*. IEEE VIS (VAST), 33-40, Chicago, October 2015. DOI: [10.1109/VAST.2015.7347628](#).
9. [Ashwinkumar Ganesan\\*\\*](#), [Kiante Branley\\*\\*](#), Shimei Pan, and Jian Chen. *LDA Explorer: Visualizing Topic Models Generated Using Latent Dirichlet Allocation*. IEEE 4<sup>th</sup> Workshop on Visual Text Analytics, ACM Intelligent User Interface (IUI), Georgia, March 2015. (**Student class project**).
10. [Keqin Wu](#), Jian Chen, [A. William Pruet](#), and Robert Hester. *HumMod Browser: An Exploratory Visualization Tool for the Analysis of Whole-Body Physiology Data*. IEEE Symposium on Biological Data Visualization (co-located with IEEE VIS), Georgia, 97-104, October 2013 (**Best paper honorable mention**). DOI: [10.1109/BioVis.2013.6664352](#).
11. Jian Chen, [Keqin Wu](#), [A. William Pruet](#), and Robert Hester. *HumMod Browser: An Exploratory Visualization Tool for Model Validation of Whole-Body Physiology Data*. Eurographics Conference on Visualization (EuroVis), Leipzig, Germany, 7-11, June 2013. [[vimeo video](#)]
12. Meng Ling and Jian Chen. *Environmental Visual Imagery: Applications to Site Characterization, Remedial Programs and Litigation Support*. Eurographics Conference on Visualization workshop: Visualization in environmental sciences (EnvirVis), Leipzig, Germany, June 2013.
13. Jian Chen. [Some Thoughts on Augmenting Human-VE Symbiosis to Improve Knowledge Discovery from Volume Rendering](#). IEEE Virtual Reality Workshop on Immersive Volume Rendering, IEEE VR, March 2013.
14. [Devon Penney\\*\\*](#), Jian Chen, and David H. Laidlaw. *Effects of Illumination, Texture, and Motion on Task Performance in 3D Tensor-Field Streamtube Visualizations*. Pacific Visualization, 97-104, 2012 (**Back cover**). DOI: [10.1109/PacificVis.2012.6183579](#).
15. [Felipe Bacim](#), Nicholas Polys, Jian Chen, Mehdi Setareh, Ji Li, and Lee Ma. *Cognitive Scaffolding in Web3D Learning Systems: A Case Study for Form and Structure*. Proceedings of ACM Web3D, Los Angeles, July 2010. DOI: [10.1145/1836049.1836063](#).
16. Jian Chen, Misha Kostandov, Igor Pivkin, Daniel K. Riskin, David Willis, Sharon M. Swartz, and David H. Laidlaw. *Virtual Analysis of Dimensionality Reduction in An Interactive Virtual Environment for Exploring Bat Flight Kinematics*. Proceedings of the Joint Virtual Reality Conference of EGVE-ICAT-EuroVR, France, October 2009 (**Front cover**). DOI: [10.2312/EGVE/JVRC09/077-084](#). (**front cover**)
17. Tao Ni, Doug A. Bowman, and Jian Chen. *Increased Display Size and Resolution Improve Task Performance in Information-Rich Virtual Environments*. Proceedings of ACM Graphics Interface (GI), 139-146, Quebec City, Canada, June 2006 [acceptance rate: 31/94 = 33%][[ACM weblink](#)].
18. Jian Chen and Doug A. Bowman. *Effectiveness of Cloning Techniques for Architectural Virtual Environment*. Proceedings of the IEEE Virtual Reality (VR), 103-110, Alexandria, VA, March 2006 [acceptance rate: 29%]. DOI: [10.1109/VR.2006.57](#).
19. Jian Chen, Michael A. Narayan, and Manuel A. Perez-Quinones. *The Use of Hand-Held Devices for Search Tasks in Virtual Environments*. Proceedings of the workshop on new directions in three-dimensional user interfaces (3DUI), IEEE Virtual Reality (VR), 15-18, Bonn, Germany, March 2005.
20. Jian Chen, Doug A. Bowman, John F. Lucas, and Chad A. Wingrave. *Interfaces for Cloning in Immersive Virtual Environments*. Proceedings of the Eurographics Symposium on Virtual Environments (EuroVR), 91-98, Grenoble, France, June 2004. DOI: [10.2312/EGVE/EGVE04/091-098](#).
21. Jian Chen, Pardha S. Pyla, and Doug A. Bowman. *Testbed Evaluation of Navigation and Text Display Techniques in An Information-Rich Virtual Environment*. Proceedings of IEEE Virtual Reality (VR), 181-188, Chicago, IL, March 2004 [acceptance rate: 23%]. DOI: [10.1109/VR.2004.1310072](#).
22. Doug A. Bowman, Chris North, Jian Chen, Nicholas F. Polys, Pardha S. Pyla, and Umur Yilmaz. *Information-Rich Virtual Environment: Theory, Tools, and Research Agenda*. Proceedings of the ACM Virtual Reality Software and Technology (VRST), 81-90, Osaka, Japan, October 2003. DOI: [10.1145/1008653.1008669](#).

23. Jian Chen. *Effective Interaction Techniques in Information-Rich Virtual Environments*. Proceedings of the Young Investigator's Forum in Virtual Reality (YoungVR), Seoul, South Korea, February 2003 (**selected as the best paper and the only paper which got full scores from all 4 reviewers**).
24. Gregorio Convertino, Jian Chen, Beth A. Yost, Young-Sam Ryu, and Chris North. *Exploring Context Switching and Cognition in Dual-View Coordinated Visualizations*. Proceedings of the *International Conference on Coordinated & Multiple Views in Exploratory Visualization (CMV)*, 57-66, London, England, July 2003. DOI: [10.1109/CMV.2003.1215003](https://doi.org/10.1109/CMV.2003.1215003).
25. Young-Sam Ryu, Beth A. Yost, Gregorio Convertino, Jian Chen, and Chris North. *Exploring Cognitive Strategies for Integrating Multiple-View Visualizations*. Proceedings of the Human Factor and Ergonomics Society 47th Annual Meeting (HFES), Denver, CO, October 2003 (**Best student paper award**).
26. Jian Chen, Deborah L. Harm, R. Bowen Loftin, Ching-Yao Lin, and Ernst L. Leiss. *A Virtual Environment System for the Comparison of DOME and HMD Systems*. Proceedings of the International Conference on Computer Graphics and Spatial Information System (CG&SIS), 50-58, Beijing, China, February 2003 (**Best paper runner up**).
27. Jian Chen, Yung-Chin Fang, R. Bowen Loftin, Ernst L. Leiss, Ching-Yao Lin, and Simon Su. *An Immersive Virtual Environment Training System on Real-Time Motion Platform*. Proceedings of the Computer Aided Design and Computer Graphics (CAD&CG), 951-954, Beijing, China, August 2001.

### PEER-REVIEWED CONFERENCE POSTERS, ABSTRACT, AND SIGGRAPH SKETCHES

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1. Gaeun Kim, Arkadiusz Sitek, Jian Chen, Karla K. Evans, and Jeremy M. Wolfe, Training a Convolutional Neural Network to Detect the Gist of Breast Cancer, *Vision Science Society (VSS) Annual Meeting. 2018*.
2. [Filip Dabek](#), Jian Chen, and Jesus J. Caban, TrajectoryFlow: Visual Summarization of Temporal Sequences, *IEEE VIS poster, 2017*.
3. [Xiaohui Bian](#), [Lu Liu](#), Jesus J. Caban, Gaoqi He, and Jian Chen. Towards A Task Taxonomy for Analyzing Electronic Health Record Cohorts from Mild-Traumatic Brain Injuries. *IEEE VIS, Events on Event, 2016*.
4. Jian Chen. A Semiotics Approach to Characterize Diffusion Tensor Imaging Visualization. *IEEE VIS/SciVis poster, 2016*.
5. [Henan Zhao](#) and Jian Chen. Empirical Guidance on Integral and Separable Marker Substrate for Large-Magnitude-Range Vector Field Visualization. *IEEE VIS/SciVis poster, 2016*.
6. [Guohao Zhang](#), Peter Kochunov, Elliot Hong, [Keqin Wu](#), Hamish Carr, and Jian Chen. A Semantic Contour Tree Approach for Visual Comparison of White Matter Connectivity in Cohorts. *IEEE VIS Workshop on Exploring Graphs at Scale (EGAS), 2015*. [[Link](#)]
7. Jian Chen, [Henan Zhao](#), [Wesley Griffin](#), Judith E. Terrill, and Garnett W. Bryant. Validation of splitVector Encoding and Stereoscopy for Quantitative Visualization of Quantum Physics Data in Virtual Environments. *IEEE Virtual Reality poster, 2015*. DOI: [10.1109/VR.2015.7223347](https://doi.org/10.1109/VR.2015.7223347).
8. Petra Isenberg, Tobias Isenberg, Michael Sedlmair, Jian Chen, and Torsten Möller. Visualization According to Research Paper Keywords. *IEEE Visualization poster, 2014*. [[Link](#)]. A longer version is online at <https://hal.inria.fr/hal-01055309>, INRIA Technical Report, Hal-01055309.
9. [Yuping Zhang\\*\\*](#), Marc Olano, Jonathan P. Dandois, and Jian Chen. Rendering Point Clouds with Feature Texture, *IEEE Visualization poster, 2013 (Student class project)*.
10. [Neda Mohammadi](#), [Ji-Sun Kim](#), [Xianming Chen](#), Jian Chen, and Mehdi Setareh. SMATS: Sketch-based Modeling and Analysis of Truss Systems. *Eurographics Symposium on Sketch-based Interfaces and Modeling (SBIM), 2012*. [[Link](#)]
11. Jian Chen, [Haipeng Cai](#), and Alexander P. Auchus. The Effects of Seeding Resolution on DTI Streamtube Visualization Comprehension. *Alzheimer's Association International Conference (AAIC), Vancouver, Canada, July 2012* [[Link](#)].
12. Jian Chen, [Andrew Maxwell\\*\\*](#), [Haipeng Cai\\*\\*](#), and Alexander P. Auchus. Interactive Visual Analysis of Diffusion-Tensor MRI Data Using the Expectation Maximization Algorithm. *American Academy of Neurology Annual Meeting (AAN), 2012*. DOI:[10.1016/j.jalz.2012.05.137](https://doi.org/10.1016/j.jalz.2012.05.137).
13. [Guangxia Li](#), [Andrew C. Bragdon](#), [Zhigeng Pan](#), [Mingmin Zhang](#), [Sharon M. Swartz](#), [David H. Laidlaw](#), [Chaoyang Zhang](#), [Hanyu Liu](#), and Jian Chen. VisBubbles: A Workflow-driven Framework for Scientific



- Data Analysis of Time-Varying Biological Datasets. *ACM SIGGRAPH Asia*, 2011. DOI: [10.1145/2073304.2073333](https://doi.org/10.1145/2073304.2073333).
14. [Liming Xu](#), J. Lyle, [Yubao Wu](#), Zhigeng Pan, Mingmin Zhang, David H. Laidlaw, Robert L. Hester, and Jian Chen, HumMod Explorer: A Multi-scale Time-varying Human Modeling Navigator. *ACM SIGGRAPH Asia*, 2011. DOI: [10.1145/2073304.2073334](https://doi.org/10.1145/2073304.2073334).
  15. Alexander P. Auchus, Juebin Huang, Jian Chen, [Haipeng Cai](#), Robert P. Friedland, Mohamad Z. Koubeissi, and David H. Laidlaw. Diffusion Tensor MRI Tractography (DTT) Identifies Altered Brain Stem Fiber Connections Accompanying Agenesis of the Corpus Callosum (ACC). *The 20th World Congress of Neurology*, November 2011.
  16. [Haipeng Cai](#), Jian Chen, Alexander P. Auchus, Stephen Correia, and David H. Laidlaw. InBox: In-situ Multiple-selection and Multiple-view Exploration of Diffusion Tensor MRI Visualization. *IEEE BioVis Conference*, 2011. [[Link](#)]
  17. [Haipeng Cai](#), Jian Chen, Alexander P. Auchus, Juebin Huang, and David H. Laidlaw. Measuring Seeding Resolution Dependence of Diffusion Tensor Streamtube Visualization. *IEEE Visualization*, 2011. [[Link](#)]
  18. Juebin Huang, Jian Chen, [Haipeng Cai](#), Robert P. Friedland, Mohamad Z. Koubeissi, David H. Laidlaw, and Alexander P. Auchus. Diffusion Tensor MRI Tractography (DTT) Reveals Altered Brainstem Fiber Connections Accompanying Agenesis of the Corpus Callosum (ACC). *American Neurological Association's (ANA) 136<sup>th</sup> Annual Meeting (oral presentation)*, San Diego, CA, 2011. [[Link](#)]
  19. [Hanyu Liu](#), [Andrew Bragdon](#), [Attila Bergou](#), and Jian Chen. Programming by Sketch for Scientific Computing. *ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games*, February 2011. [[Link](#)]
  20. Jian Chen, [Daniel Riskin](#), [Tatjana Y. Hubel](#), David Willis, [Arnold Song](#), [Hanyu Liu](#), Kenneth Breuer, Sharon Swartz, and David H. Laidlaw. Exploration of Bat Wing Morphology through a Strip Method and Visualization. *ACM SIGGRAPH (talk)*, Los Angeles, July 2010. [[Link](#)]. DOI: [10.1145/1837026.1837039](https://doi.org/10.1145/1837026.1837039).
  21. Jian Chen, Daniel K. Riskin, Kenny S. Breuer, Sharon M. Swartz, and David H. Laidlaw. Bookstein Coordinate-based Shape Analysis of Bat Wing Kinematics. *Integrative and Comparative Biology* (also in the Society for Integrative and Comparative Biology Annual Meeting), 2009. [[Link](#)]
  22. Jian Chen, Doug A. Bowman, and David H. Laidlaw. A Hybrid Direct Visual Editing Method for Architectural Massing Study in a Virtual Environment. *IEEE Symposium on 3D User Interfaces*, Lafayette, LA, March 2009. DOI: [10.1109/3DUI.2009.4811227](https://doi.org/10.1109/3DUI.2009.4811227).
  23. Andrew S. Forsberg, John N. Huffman, Joseph LaViola, Jay Dickson, Caleb Fassett, Robert Zeleznik, and Jian Chen. Work in Progress: A Head-to-Head Comparison of Navigation Techniques for Exploring 3D Geoscience Data Sets. *ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games*, Boston, MA, February 2009 (**Best poster award**). [[Link](#)]
  24. Andrew S. Forsberg, Jian Chen, and David H. Laidlaw. Towards Comparing 3D Flow Visualization Methods, A User Study. *IEEE Visualization*, Columbus, OH, October 2008.
  25. Misha Kostandov, Jian Chen, Igor Pivkin, Sharon M. Swartz, and David H. Laidlaw. Exploring Dimensionality Reduction of Animal Flight Kinematics in An Interactive Virtual Reality Setting. *ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games (I3D)*, Redwood City, CA, February 2008. [[Link](#)]
  26. Daniel Acevedo, Jian Chen, and David H. Laidlaw. Modeling Perceptual Dominance among Visual Cues in Multilayered Icon-based Scientific Visualizations. *IEEE Visualization*, Sacramento, CA, October 2007 (**Best poster runner up**). [[Link](#)]
  27. Jian Chen, Andrew S. Forsberg, Sharon M. Swartz, and David H. Laidlaw. Interactive Multiple Scale Small Multiples. *IEEE Visualization*, Sacramento, CA, October 2007. [[Link](#)]
  28. Jian Chen, Andrew S. Forsberg, Misha Kostandov, David Willis, and David H. Laidlaw. The Effect of Using Large, High-resolution Stereoscopic Displays for Flow Visualization. *ACM SIGGRAPH*, San Diego, CA, August 2007 [acceptance rate: 37%]. [[Link](#)]
  29. John F. Lucas, Doug A. Bowman, Jian Chen, and Chad A. Wingrave. Design and Evaluation of 3D Multiple Object Selection Techniques. *Proceedings of the ACM Interactive 3D graphics (I3D)*, Washington, D.C., February 2005. [[Link](#)]

30. Ching-Yao Lin, David T. Chen, R. Bowen Loftin, Jian Chen, and Ernst L. Leiss. Interacting with Visible Human Data Using an ImmersaDesk. *Proceedings of IEEE Virtual Reality (VR)*, 267-268, Orlando, FL, March 2002. [[Link](#)]

## PANELS

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1. Alfred Inselberg, Rachael Brady, Daniel Coming, Laura Monroe, and Jian Chen. Visualization and simulation on immersive display devices. International Symposium on Visual Computing (ISVC), Las Vegas, NV, December 2008.
2. Robert Lindeman, Gabriel Zachmann, Kristopher Blom, Jian Chen, Gerwin de Haan, and Andrew Raji. Building the future of – and a career in – VR. IEEE Virtual Reality (VR), Reno, NV, March 2008.
3. David H. Laidlaw, Victoria Interrante, William Ribarsky, and Jian Chen (moderator/organizer). Getting human-centered computing and scientific visualization married: the myth and critical issues. IEEE Visualization, Sacramento, CA, October 2007.

## CONFERENCE DEMONSTRATIONS

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1. Jian Chen, Judith E. Terrill, Henan Zhao, Guohao Zhang, Keqin Wu, Alexander Garbrino, and Yongnan Zhu. Interactive Visual Computing Laboratory Research. IEEE Virtual Reality: Lab and Project, 2015.
2. Jian Chen, Haipeng Cai, and Alexander P. Auchus. InBox: In-situ Multiple-Selection and Multiple-View Exploration of Diffusion Tensor MRI Visualization. *IEEE Visualization in Health Care*, 2011.
3. Doug A. Bowman, Dennis Gracanin, Chad Wingrave, Jian Chen, Nicholas Polys, Tao Ni, Regis Kopper, and Ji-sun Kim. 3D Interaction Group Research. Lab exhibit at IEEE Virtual Reality 2006.

## TRAINING CERTIFICATES:

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1. Diffusion-weighted magnetic resonance imaging (DTI): principles and applications, Summer School in Biomedical Engineering, Schoenburg, Germany, August 2007.
2. Parallel and grid computing: principles and applications, Argonne National Lab and University of Chicago, Chicago, IL, January 2002.

## PATENT

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- Jian Chen, Pipeline quick joints. No. ZL98250034.3, Patent Office, P.R. China, 1998.

## INVITED TALKS AND OTHER THAN CONFERENCE PRESENTATIONS

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1. Dagstuhl: Visualization Seminar, January 2018 (By invitation only).
2. Towards Understanding the Temporal Aspects of Interactive Visualization for Automated Design and Analysis, MIT AI Lab Fall Seminar Series, Cambridge, MA. November 28, 2017.
3. Towards Understanding the Temporal Aspects of Interactive Visualization for Automated Design and Analysis, Xi'dian University 111 Project, Xi'an, China. October 14, 2017.
4. Towards Understanding the Temporal Aspects of Interactive Visualization for Automated Design and Analysis, Shanghai Jiaotong University (host: Dr. Baoliang Lv), Shanghai, China. October 12, 2017.
5. Accurate Visualization of Knowledge Discovery in Big-Data Science, NOAA (host: Dr. Keqin Wu), June 6, 2017.
6. Can A Machine Be Better Than Humans in Detection Tasks? Maryland Cancer Retreat (host: Dr. Rao Gullapalli), May 12, 2017.
7. Using Vision to Think and My Perspectives on Using VR for Pain Treatment, University of Maryland, Baltimore (hosts: Drs. Hants Williams and Susan Dorsey), December 19, 2016.
8. Visual Ecological Approach to Knowledge Discovery in Immersive Analysis, IBM Research Cognitive colloquium, Augmenting Human Intelligence (organizer: Dr. Guruduth S. Banavar, Invitation only), September 20, 2016.
9. **(Keynote speaker)** Objective visualization: understanding perceptual accuracy of spatial data representation, Maryland Neuroimaging Retreat, April 12, 2016.

10. NII Shonan Meeting on “Immersive Analytics: New Multidisciplinary Initiative to Explore Future Interaction Technologies for Data Analytics,” Shonan Village, Japan, February 2016 (<http://shonan.nii.ac.jp/seminar/seminardetails074/>).
11. Immersive Analytics for Streaming Data Visualization, IBM lightning talk, March 25, 2016.
12. SciVis+InfoVis in VR: An ultimate approach to improve measurement accuracy? SIGGRAPH 2014 Birds of Feathers: Immersive Visualization for Science and Research, (organizers: Terrill, Judith E. and Bednarz, Tomasz P.), August 2014.
13. Dagstuhl 14231: Scientific Visualization Seminar (Invitation only), July 2014.
14. A visualization language, US Food and Drug Administration, (hosts: Dr. Badano, Aldo and Fahad Zafar), December 13, 2013.
15. A visualization language, The Bradley Department of Electrical and Computer Engineering, Virginia Tech Research Center – Arlington (host: Prof. Yue Wang), October 4, 2013.
16. A visualization language for diffusion tensor MRI studies, (host: Dr. Alexander P. Auchus), University of Mississippi Medical Center, June 26, 2013.
17. A visualization language, Information Technology Laboratory, Applied & Computational Mathematical Division, National Institute of Standards and Technology (host: Wesley Griffin), May 14, 2013.
18. A visualization language, Computer Science, Boston University, Boston, MA (host: Prof. Margrit Betke), April 22, 2013.
19. Interactive visual computing for knowledge discovery in the bat flight motion databases, Virginia Tech, Blacksburg, VA (host: Prof. Rolf Mueller), February 27, 2013.
20. Interactive visual computing for knowledge discovery in biology and biomedicine, Johns Hopkins University (host: Jerry Prince), October 26, 2012.
21. Interactive visualization in medical research, Cornell Medical School, New York (host: Prof. Yi Wang), September 28, 2012.
22. Interactive visual computing for knowledge discovery in science, engineering, and training, Air force Research Laboratory, Dayton, OH, (hosts: Drs. Simon Su and Paul Havig), September 27, 2012.
23. Understanding the science of scientific visualization, Seven Universities in China, Dec 3 – Dec 30, 2011 (Zhejiang University, Hangzhou Normal University, Shangdong University, Jinan University, Nankai University, Tianjin University, Huadong Science and Technology University)
24. VisBubbles: a workflow-driven framework for scientific computing, NSF MS EPSCoR meeting, University of Mississippi, Oxford, MS, September 2011.
25. The six blind-men’s approach to interactive visual computing for sciences and engineering, Joint DoD / DHS Workshop on Image Analysis. Alcorn State University, January 21, 2011.
26. Visual and interactive data modeling for science, engineering, and training, Rutgers University, DIMACS, October 20, 2010.
27. Beyond DaVinci: interactive visualization for sciences, NSF ESPCoR meeting, University of Mississippi, September 20, 2010.
28. Interactive visualization for science, engineering, and training, Six Universities in China, May 21-June 8, 2010 (Peking University, Zhejiang University, Nankai University, Tianjin University, etc.).
29. Understanding bat wing morphology through modeling and visual data mining, University of Southern Mississippi, March 8, 2010.
30. VisBubbles: rethinking the visual interface design, Mississippi State University, February 17, 2010.
31. Quantifying the complexity of bat wing kinematics using proper orthogonal decomposition, Mitsubishi Electric Research Laboratories (MERL), Boston, February 2009.
32. Domain-specific design of interaction techniques in Architecture, Engineering, and Construction, Brown University, October 2006.
33. Domain-specific design of interaction techniques in Architecture, Engineering, and Construction, General Motors R&D, September 2006.

34. Designing 3D interaction techniques: research challenges in 3D user interface design, Dynamic Graphics Lab (DGP) and Ergonomics in Teleportation and Control Laboratory (ETC), University of Toronto, February 2005.
35. Designing domain-specific cloning techniques, ACM SIGGRAPH 2004, 3DUI, Birds of a Feather, 2004.

### **INTERVIEWS, MEDIA COVERAGE, AND PROCEEDING COVERS**

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- *New virtual reality space at UMBC reduces distance between computers, data, and people.* UMBC news, <http://news.umbc.edu/new-virtual-reality-space-at-umbc-reduces-distance-between-computers-data-and-people/> by Meghan Hanks, October 21, 2016.
- *Virtual reality opening entertainment, research possibilities.* WMAR, <http://www.abc2news.com/business/technology/virtual-reality-opening-entertainment-research-possibilities> by Brendan McNamara, October 5, 2016.
- *Immersive “Hybrid Reality” system coming to UMBC,* The Daily Record, <http://thedailyrecord.com/2015/09/01/immersive-hybrid-reality-system-coming-to-umbc/> by Daniel Leaderman, September 1, 2015.
- *UMBC Building Large Virtual Reality Environment,* BaltimoreGamer, <http://www.baltimoregamer.com/news/umbc-building-large-virtual-reality-enviorment/> by Aurianna Mansell, September 2015.
- *UMBC professors think virtual reality can change research.* Technical.ly Baltimore, <http://technical.ly/baltimore/2015/10/12/umbc-immersive-virtual-reality-environment/> by Stephen Babcock, October 12, 2015.
- Front cover image (on DT-MRI tractography), PacificVis, 2012
- Front cover image (on bat flight modeling), EuroVR, 2009
- Front cover image (on domain-specific design), Presence: Teleoperators and Virtual Environments, MIT Press. Oct. 2009.
- Back cover image (on domain-specific interaction), Proceedings of IEEE Virtual Reality, 2006

## Teaching

### **STUDENTS**

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*This section presents the graduate and undergraduate student mentoring activities: I graduated two PhDs and 9 MS students. I am chairing 4 PhD students' dissertation committee. I have served on 11 PhD student committees (10 finished) on 8 MS student committees (all done). I have advised 14 undergraduate students. Four undergraduate students have co-authored papers with me. Three papers were published out of class projects and students went to conferences to present their work.*

### **Student Achievements**

- Henan Zhao, PhD student (UMBC), IEEE VIS doctoral colloquium fund, 2015.
- Henan Zhao, PhD student (UMBC), CRA-W Grad Cohort Workshop fund, 2015.
- Keqin Wu, postdoc, UMBC, best paper award, 2013.
- Joseph Kitchen, best undergraduate research award (in the theory methods category), USM, 2011-2012.
- Joseph Kitchen, NASA fellowship, for best undergraduate research, USM, 2012-2013.
- Timothy Bonnette, undergraduate fellowship on his overall research credential, USM, 2010-2011.
- Haipeng Cai, best graduate student research award, CoSE and School of Computing, USM, 2011-2012.
- Haipeng Cai, best graduate student research award, CoSE and School of Computing, USM, 2010-2011.
- Hanyu Liu, best graduate student research award, CoSE and School of Computing, USM, 2009-2010.

### **Ph.D. Students**

#### **Chair (current)**

- Henan Zhao (woman), 2013F-2017F, co-chair with Marc Olano

*Dissertation: Integrating Information Visualization and Scientific Visualization for Accurate Perception and Pattern Search*

**Passed PhD prelim in January 2017. Expected to graduate in Fall 2017.**

*(Because I left UMBC for OSU in 2017, a UMBC co-chair was added as of May 2017. Thanks Marc!)*

- Paul Heiss, 2013S-, co-chair with Dr. TBD
- Alexander Garbarino, 2013F-,

*Dissertation: A visual Ecological Approach to Large Network Visualization: Metaphor and Interaction*

### **Chair (graduated)**

- Li-Chien Lee, 2014F-2018S, co-chair with Chien-I Chang (@Facebook)

*Dissertation: An Information Theoretical Approach to Band Subset Selection for Hyperspectral Data Exploitation*

- Guohao Zhang, 2012F-2017F (@Facebook)

*Dissertation: A Semiotic Approach to Evaluating Brain Network Visualizations*

### **Other**

- Hanyu Liu, 2009-2012, transferred from USM to SUNY (@Amazon)
- Haipeng Cai, 2010-2012, transferred from USM to University of Notre Dame (a tenure-track Assistant Professor at Washington State University.)

### **Committee member**

- Ko-Chih Wang, 2018S, advisor: Han-Wei Shen
- Junpeng Wang, 2018S, advisor: Han-Wei Shen
- Cheng Li, 2017F, advisor: Han-Wei Shen
- Mershack Okoe, 2016F, advisor: Radu Jianu (CS), University of South Florida
- Yu Wang, 2015Su, advisor: Marc Olano, UMBC
- Liang Sun, 2015Su, advisor: Carl Schmidt (Biology), University of Delaware
- Shih-Yu Chen, 2014S, advisor: Chein-I Chang, UMBC
- Robert Schultz, 2014S, advisor: Chein-I Chang, UMBC
- Drew Paylor, 2014S, advisor: Chein-I Chang, UMBC
- Adrian Rosebrock, 2014S, advisor: Tim Oates, UMBC. Title: A Rapidly Deployable Image Classification System Using Feature Views.
- Chris Morris, 2014S, advisor: Penny Rheingans, UMBC. Title: Multi-Modal Saliency Fusion for Illustrative Image Enhancement.
- Timothy Leschke, 2013F, advisor: Charles Nicholas, UMBC. Title: Applying Data Visualization Techniques to Support the Analysis of Digital Forensic Data.
- Shawn O'Keefe, 2013S, advisor: Dia Ali (CS), USM. Title: Synergy of the developed 6D BIM framework and conception of the nD BIM framework and nD BIM process ontology.

### **Master's Students**

#### **Chair (current)**

#### **Chair (graduated)**

- Abhishek Abhishek, 2017Su (@Paypal)  
*Thesis: Calibrated and Overlapping Columns: Visualizing A Single Large-Range or Multivariate Non-Spatial Quantities in Spatial Domain*
- Aparna Kaliappan (woman), 2017S  
*Thesis: Quantitative Data Visualization in Compartmented Force-Directed Graphs using*

- Calibrated Columns*
- Andrew Li, 2015F  
*Project: Effects of Secondary Views on Visualizing Diffusion Tensor MRI Tracts for Average FA Value Comparison Tasks*
  - Guohao Zhang, 2014F  
*Thesis: Effects of Visual Markers and Position for Graph Visualization of Brain Functional Magnetic Resonance Imaging: A Ranking Study*
  - Shayna Weinstein (woman), 2013Summer, Co-chair: Tim Oates  
*Thesis: Gleaning Bat Wing Morphology using a Bag-of-Patterns Representation*
  - Haipeng Cai, 2012, USM (@Washington State U. tenure-track)  
*Thesis: Zifazah: A Scientific Visualization Language for Tensor Field Visualizations*
  - Yongnan Zhu, 2015S, visiting faculty assistant, Hangzhou Dianzi University  
*Thesis: PathRings: A Web-based Tool for Exploration of Orthology and Expression Data in Biological Pathways*
  - Liming Xu, 2013S, visiting faculty assistant, Zhejiang University  
*Thesis: Artistic Rendering for Visualizing Diffusion Tensor Magnetic Resonance Imaging*
  - Guangxia Li (woman), 2012S, visiting faculty assistant, Zhejiang University  
*Thesis: VisBubbles: A Coordinated Multi-view Exploration Environment for Motion Analysis*

### Committee member

- Winston Tong, 2016F, advisor: Charles Nicholas  
*Project: ReXonciler - A Software Solution to Aid Medication Reconciliation*
- Kianté Brantley, 2016S, advisor: Tim Oates  
*Thesis: BCAP: an Artificial Neural Network Pruning Technique to Reduce Overfitting*
- Elizabeth Baumel, 2015F, advisor: Marc Olano  
*Thesis: Distance Adaptation of Diffusion Reflectance and Subsurface Scattering*
- Pan Teng, 2015S, advisor: Carl Schmidt (Biology), University of Delaware  
*Thesis: Text-mining and Visualization Approach Help Interpret Experimental Data and Make Hypotheses*
- Yuping Zhang, 2015S, advisor: Marc Olano  
*Thesis: Real-time Realistic Rendering of Sunrise and Sunset on the Ocean*
- Jadrian Miles, 2007F, advisor: David H. Laidlaw, Brown University
- Mykhaylo Kostandov, 2007S, advisor: David H. Laidlaw, Brown University
- Devon Penney, 2008S, advisor: David H. Laidlaw, Brown University

### Undergraduate Students (as advisor)

- Levan Sulimanov, 2017S  
*Project: Virtual Phantom Body for Treating People with Mobile Disabilities in Augmented Reality*
- Aparna Kaliappan (woman), Semiotics approach to data visualization, 2016Su
- Chen Kuo, Color maker and gene pathway visualization, 2016Su
- Wesley Chiou, Color maker and gene pathway visualization, 2016Su-2017Su, Now at ARL.
- Maxell Poole, 2015F
- Zachary Garbarino, NSF REU: Gene pathway visualization, 2014Su
- Blossom Metevier (woman, Meyhoff Scholar), NSF/REU: brain network visualization, 2013Su
- Alexander Stachowiak, NSF REU: brain network visualization, 2013Su
- Sharyn Kurland (woman), NSF REU: brain network visualization, 2013Su
- Julia Ford (woman), NSF REU: gene pathway visualization, 2013Su and 2014Su
- Joseph A. Kitchin, USM Honors College: kinect-based interaction, Computer Science, 2011
- Timothy Bonnette, USM Honors College: brain imaging visualization, Computer Science, 2011
- Jeffrey Vamado, Color studies, 2010F, USM

- Corey Berry, DHS-funded, Sport security visualization, 2010, USM

### **Postdocs and Visiting Professors**

- Mai Elshehaly, 2015-2016, funded through my NSF grant. Now faculty at Suez Canal University, Egypt.
- Keqin Wu, 2012-2014, funded through my NSF grant. Now research scientist at NOAA
- Yanning Xu, 2013-2014, Shandong University, China
- Wei Song, 2013-2014, Zhengzhou University, China

### **Visiting Students**

- Xiaohui Bian, 2016 – 2017, Huazhong Science and Technology University, China
- Lu Liu, 2015 – 2016, Peking University, China
- Yubao Wu, 2011– 2012, USM

## Courses

*I taught a mix of graduate and undergraduate courses. Courses in my own areas are Visualization and Virtual Reality.*

### **COURSES**

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Fall 2018: No teaching

Spring 2018: Special Topic: Visualization (w/ deep learning)

Fall 2017: Research leave at Harvard. No teaching

Spring 2017: CMSC 491/691: Special Topic: Virtual Reality Design for Science

Fall 2016: CMSC 436/636: Data Visualization

Spring 2016:

*Took the initiative and enabled a \$5,000 sponsorship made by Nielsen Co. (Thanks, Nielsen!)*

Fall 2015: Maternity leave: no classroom teaching

Spring 2015:

CMSC 435/634 (Intro. Computer Graphics)

CMSC 341 (Data Structures)

Fall 2014:

CMSC 491/691: Special topic: Human-centered Computing in Visualization

Spring 2014: Maternity leave: no classroom teaching (tenure clock stopped by a year)

Fall 2013:

CMSC 435 / 634 (Intro. Computer Graphics)

CMSC 341 (Data Structures)

Spring 2013:

CMSC 635: Advanced Computer Graphics (cross-listed)

Fall 2012 (at UMBC):

CMSC 341: Data Structures

Fall 2011:

COS 701: Visualization Toolkit (Core course mandatory to all PhD students)

CSS 333: Programming in C

Spring 2011:

CSS 211: Introduction to Statistics

CSS 333: Programming in C

Fall 2010:

CSC 414: Software Engineering

CSC 414L: Software Engineering lab

(One course buyout using a grant.)

Spring 2010:

CSC 695: Game Design (a new joint course with the Art department)

CSC 425/ 625: Computer Graphics

Fall 2009 (at USM):

CSC 698: Interactive Visualization

- Guest Lecturer:
  - Virtual Reality Design for Science, Brown University/RISD, Fall 2008
  - COS 701: visualization toolkit, USM, Fall 2009
- TA: Computer Graphics, Virginia Tech, Fall 2002 - Spring 2003
- Computer Graphics, Advanced Rendering with OpenGL, Virginia Tech, Fall 2002

## Service

### LEADERSHIP

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- UMBC campus-wide: Immersive Hybrid Reality Lab Research, Spring 2017 Pilot Grant Call for Applications (*With the Office of Vice President for Research on the campus-wide initiatives in virtual reality research*)
- IEEE International Conference on Virtual Reality and Visualization (ICVRV), Program chair, 2016
- IEEE Virtual Reality 1<sup>st</sup> Immersive Analytics 2016 Workshop, Jian Chen, G. Elisabeta Marai, Kim Marriott, Falk Schreiber, and Bruce H. Thomas, <https://sites.google.com/site/immersiveanalytics/>, March 2016.

### EDITORIAL BOARD

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- Special Issue Associate Editor: *Immersive Analytics*, Frontier in Robotics and AI, 2017.
- Frontiers in Robotics and AI, 2014-current

*I was introduced because of expertise in virtual reality and because the journal wants to publish articles in virtual reality. The impact factors for the Frontiers series have been high [http://www.frontiersin.org/news/Frontiers\\_Impact\\_Factors\\_2013/875](http://www.frontiersin.org/news/Frontiers_Impact_Factors_2013/875) and this specific journal in the Frontier series is too new to have an impact factor.)*

- International Journal of Computational & Neural Engineering (IJCNE), 2013-2016.

### PROFESSIONAL SERVICE

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#### 2019:

IEEE VR video chair

IEEE Virtual Reality Best Dissertation Award Committee member (provide written reviews for 5 dissertations among 9 candidates and recommend to the reward committee chair.)

#### 2018:

Two NSF panel and one ad-hoc review

IEEE VR workshop chair

Special issue editor: Frontier Special Issue on Immersive Analytics

IEEE VR program committee

EuroVis program committee



ChinaVis program committee  
VINCI program committee  
ACM SUI (spatial user interface) program committee  
IEEE VIS BELIV program committee  
BDVA (big data and visual analytics) program committee

**2017: I removed myself from most service work to focus on my research and new colleagues at OSU and Harvard.**

IEEE VR workshop chair  
IEEE VR program committee  
IEEE VIS Workshop on Immersive Analytics, program committee  
ACM Spatial User Interface, program committee  
IEEE EuroVis Short paper committee

**2016:**

Two NSF panels and an ad-hoc reviewer  
IEEE VR workshop chair  
IEEE Pacific Vis program committee  
IEEE VIS conference committee  
ICVRV program chair (see the leadership above)  
VINCI program committee

**2015:**

Two NSF panels  
IEEE VIS publicity chair  
IEEE VR poster chair  
IEEE VR program committee  
IEEE EuroVis program committee  
IEEE BioVis program committee  
VINCI program committee

**2014:**

Two NSF panels  
EuroVis program committee  
IEEE VR conference committee  
IEEE VIS conference committee  
VINCI program committee  
Journal reviews: EuroVis (3), VIS (3), BMC Bioinformatics (1), Information visualization (1), Springer Interdisciplinary Sciences: Computational Life Sciences (1), International Journal of Software Informatics (1).  
Conference reviews: BioVis (2), ACM CHI (1), VINCI (4).  
PhD dissertation external review (1)

**2013:**

Two NSF panels  
IEEE Virtual Reality program committee  
IEEE VIS conference committee  
VINCI program committee  
Reviews: EuroVis (5); VR (3); TVCG (2); IJHCS (2); VINCI (4)

**Before 2013:**

- NSF Proposal & Panel reviewer (2008, 2010-2012)

- Program committee: IEEE Virtual Reality (2009-2013), EuroVis (2012), International Symposium on Visual Computing (2007-2010), SIGGRAPH Web3D (2007-2010), ACM Multimedia (2008)
- Conference committee: ACM SIGGRAPH VRCAI workshop chair (2012), IEEE Virtual Reality (2008-2012), workshop chair (2008, 2010-2011), tutorial chair (2007), student volunteer chair (2006)
- Section chair: ISVC 2012 (visualization), IEEE Virtual Reality 2012 (User Interface), SIGGRAPH Asia 2011: (Sketch and posters: User interface and interaction)
- Reviewing assignments: *IEEE Transactions on Visualization and Computer Graphics* (2009-2012), *International Journal of Human-Computer Studies* (2008-2011), *International Journal of Virtual Reality* (2008-2009), *SIGGRAPH* 2009, *Visualization* (2004, 2009-2012), *CHI* (2007-2012), *UIST* (2004), *VR* (2004-2012), *VRST* (2004), *GI* (2007), *ISVC* (2007-2010), *SIGGRAPH Web3D* (2007-2008), *3DUI* (2006-2009), *Multimedia* (2008), *PacificVis* (2011-2012).  
Details: 2012: IEEE Visualization (TVCG, 6); VAST (1); Web3D (4); Advances in Human-Computer Interaction (1); Visual Computing (1);
- Member: IEEE, ACM, SIGGRAPH, CHI, SID, CRA Women in Computing
- Co-founder: HCC-SciVis and SciVis mailing lists

## UNIVERSITY SERVICE

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- (Demo) Military & government visitors, May 3, 2017.
- (Demo) President Hrabowski and President McPherson visit, May 2, 2017.
- (Demo) State Senator Ed Kasemeyer (w/ President Hrabowski and Dr. Anupam Joshi), December 6, 2016.
- (Demo) Ribbon Cutting Event for  $\pi^2$ , October 14, 2016
- (Demo) State (Maryland) legislature's appropriations committee visit, September 30, 2016
- (Demo)  $\pi^2$ : Immersive Hybrid Virtual Environment, UMBC 50, September 16, 2016
- Undergraduate award committee, 2012F- 2017S
- USM recruitment photo shoot, April 9, 2010
- Undergraduate award committee, 2012F- 2015F

## DEPARTMENT / COLLEGE SERVICE

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- Graduate Admissions committee, CSE, OSU, member, 2017 Fall
- Seminar coordinator, CSE, OSU, 2017 Fall
- Admissions committee, CSEE, UMBC, member, 2016 Fall – 2017 Spring
- Admissions committee, CSEE, UMBC, member, 2015 Fall
- NAE grand challenge scholars program, Advisory board member, COEIT, 2015 Fall
- Faculty search committee, CSEE, UMBC, member, 2014 Fall- 2015 Spring
- Undergraduate committee, CSEE, UMBC, member, 2014 Fall
- Admission committee, CSEE, UMBC, member, 2013 Fall – 2014 Summer
- Graduate committee, CSEE, UMBC, member, 2012 Fall- 2014 Summer
- Graduate student research award, Chair, CS, USM, Spring 2012
- Faculty search committee, member, member, CS, USM, 2012
- Outreach committee, CS, USM, member, 2011
- Recruitment committee, CS, USM, member, 2011-2012
- Curriculum committee, CS, USM, chair, 2009-2011
- Research committee, CS, USM, chair, 2009-2011
- CS Program review, CS, USM, member, July 8, 2010
- Faculty advisor: demo to more than 20 high school students, CS, USM, October 29, 2009
- Advisement week to 15 students for CS, USM, 2009
- Women in Computer Science, coordinator, Brown University, 2007-2009
- Social chair: Upsilon Pi Epsilon, Virginia Tech, 2004-2006
- WebZar, 3D Interaction Research Group, Virginia Tech, 2004-2005
- Member, Virginia Tech Center for Human-Computer Interaction, 2002-2006
- Member, Virginia Tech 3D Interaction Research Group, 2002-2006

## **OTHER SERVICE**

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- USM recruitment photo shoot (April 9, 2010)
- School of Computing Program review (July 8, 2010)
- Gave six research talks in China (Peking U, Zhejiang U, Nankai U, Tianjin U, etc.) (May 21 – June 8, 2010)
- School of Computing, demo to more than 20 high school students (October 29, 2009)
- Advisement week to 15 students for the School of Computing

Member: IEEE, ACM, SIGGRAPH, CHI, SID, CRA Women in Computing

Co-founder: HCC-SciVis and SciVis mailing lists