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EDUCATION

Chalmers University of Technology	Göteborg, Sweden	2006	Ph. D. in Computer Science
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Chalmers University of Technology	Göteborg, Sweden	2001	M. Sc. in Comp. Sci. & Eng.
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Chalmers University of Technology	Göteborg, Sweden	2001	B. Sc. in Comp. Sci. & Eng.
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- Ph.D. dissertation: “3D Occlusion Management and Causality Visualization,” School of Computer Science & Engineering, Chalmers University of Technology, Göteborg, Sweden, December 2006 (ISBN 91-7291-869-1)
- Ph.D. Advisor: Professor Philippos Tsigas
- Ph.D. Defense: December 19, 2006 (Opponent: Professor Doug A. Bowman, Virginia Tech)

PROFESSIONAL EXPERIENCE

Purdue University

West Lafayette, IN, USA

Associate Professor (with tenure)

from August 18, 2014 (ratified April 4, 2014)

Assistant Professor (tenure-track)

August 2008 – present

- Faculty member in the School of Electrical and Computer Engineering at Purdue University

Microsoft Research – INRIA Center

Paris, France

Postdoctoral Research Fellow

June 2007 – August 2008

- Member of the Aviz research group, mentored by Dr. Jean-Daniel Fekete

INRIA/LRI at Université Paris-Sud

Paris, France

Postdoctoral Research Fellow

January 2007 – June 2007

- Member of the Aviz/In-Situ research groups, mentored by Dr. Jean-Daniel Fekete

Georgia Institute of Technology

Atlanta, GA, USA

Visiting Scholar

Spring 2006

- Visiting member of the Information Interfaces research group

Chalmers University of Technology

Göteborg, Sweden

Ph.D. Student

September 2001 – December 2006

- Member of the Distributed Computing and Systems research group, advised by Dr. Philippos Tsigas

PUBLICATIONS

Journal Papers (peer-reviewed)

- J33. [N. Elmqvist](#), J. S. Yi. Patterns for Visualization Evaluation. *Information Visualization*, to appear, 2014.
- J32. E. R. Fisher, S. K. Badam, [N. Elmqvist](#). Designing Peer-to-Peer Distributed User Interfaces: Case Studies on Building Distributed Applications. *International Journal of Human-Computer Studies*, 72(1):100–110, 2014.
- J31. S. Ghani, B. Kwon, S. Lee, J. S. Yi, [N. Elmqvist](#). Visual Analytics for Multimodal Social Network Analysis: A Design Study with Social Scientists. *IEEE Transactions on Visualization and Computer*

- Graphics (IEEE SciVis/InfoVis/VAST 2013 proceedings), 19(12):2032–2041, 2013. [32/125, 26% acc. rate]
- J30. N. Elmqvist, P. Irani. Ubiquitous Analytics: Interacting with Big Data Anywhere, Anytime. *IEEE Computer*, 46(4):86–89, 2013.
- J29. W. Javed, N. Elmqvist. ExPlates: Spatializing Interactive Analysis to Scaffold Visual Exploration. *Computer Graphics Forum* (IEEE EuroVis 2013 proceedings), 32(2):441–450, 2013. [49/177, 28% acc. rate]
- J28. S. MacNeil, N. Elmqvist. Visualization Mosaics for Multivariate Visual Exploration. *Computer Graphics Forum*, 32(6):38–50, 2013.
- J27. W. Javed, N. Elmqvist. Stack Zooming for Multi-Focus Interaction in Skewed-Aspect Visual Spaces. *IEEE Transactions on Visualization and Computer Graphics*, 19(8):1362–1374, 2013.
- J26. K. P. C. Madhavan, M. Vorvoreanu, N. Elmqvist, A. Johri, N. Ramakrishnan, G. A. Wang, A. McKenna. Portfolio Mining. *IEEE Computer*, 45(10):95–99, 2012.
- J25. S. Afzal, R. Maciejewski, Y. Jang, N. Elmqvist, D.S. Ebert. Spatial Text Visualization Using Automatic Typographic Maps. *IEEE Transactions on Visualization and Computer Graphics* (IEEE SciVis/InfoVis 2012 proceedings), 18(12):2556–2564, 2012. [44/178, 25% acc. rate]
- J24. B. Kwon, W. Javed, S. Ghani, N. Elmqvist, J. S. Yi, D. Ebert. Evaluating the Role of Time in Investigative Analysis of Document Collections. *IEEE Transactions on Visualization and Computer Graphics*, 18(11):1992–2004, 2012.
- J23. B. Bowman, N. Elmqvist, T. J. Jankun-Kelly. Toward Visualization for Games: Theory, Design Space, and Patterns. *IEEE Transactions on Visualization and Computer Graphics*, 18(11):1956–1968, 2012.
- J22. K. Kim, N. Elmqvist. Embodied Lenses for Collaborative Visual Queries on Tabletop Displays. *Information Visualization*, 11(4):319–338, 2012.
- J21. S. Ghani, N. Elmqvist, J. S. Yi. Perception of Animated Node-Link Diagrams for Dynamic Graphs. *Computer Graphics Forum* (IEEE EuroVis 2012 proceedings), 31(3):1205–1214, 2012. [55/202, 27% acc. rate]
- J20. N. Elmqvist, D. S. Ebert. Leveraging Multidisciplinary in a Visual Analytics Graduate Course. *IEEE Computer Graphics & Applications*, 32(3):84–87, May/June 2012.
- J19. N. Elmqvist, A. Vande Moere, H.-C. Jetter, D. Cernea, H. Reiterer, T. J. Jankun-Kelly. Fluid Interaction for Information Visualization. *Information Visualization*, 10(4):327–340, 2011.
- J18. P. Isenberg, N. Elmqvist, D. Cernea, J. Scholtz, K.-L. Ma, H. Hagen. Collaborative Visualization: Definition, Challenges, and Research Agenda. *Information Visualization*, 10(4):310–326, 2011.
- J17. S. Ghani, N. Henry Riche, N. Elmqvist. Dynamic Insets for Context-Aware Graph Navigation. *Computer Graphics Forum* (IEEE EuroVis 2011 proceedings), 30(3):861–870, 2011. [54/190, 28% acc. rate]
- J16. N. Elmqvist, P. Dragicevic, J.-D. Fekete. Color Lens: Adaptive Color Scale Optimization for Visual Exploration. *IEEE Transactions on Visualization and Computer Graphics*, 17(6):795–807, 2011.
- J15. W. Javed, B. McDonnell, N. Elmqvist. Graphical Perception of Multiple Time Series. *IEEE Transactions on Visualization and Computer Graphics* (IEEE Vis/InfoVis 2010 proceedings), 16(6):927–934, 2010. [35/135, 26% acc. rate]
- J14. J. S. Yi, N. Elmqvist, S. Lee. TimeMatrix: Visualizing Temporal Social Networks Using Interactive Matrix-Based Visualizations. *International Journal of Human-Computer Interaction*, 26(11–12):1031–1051, 2010.
- J13. A. Bezerianos, F. Chevalier, P. Dragicevic, N. Elmqvist, J.-D. Fekete. GraphDice: A System for Exploring Multivariate Social Networks. *Computer Graphics Forum* (IEEE EuroVis 2010 proceedings), 29(3): 863–872, 2010. [48/164, 29% acc. rate]
- J12. N. Elmqvist, J.-D. Fekete. Hierarchical Aggregation for Information Visualization: Overview, Techniques and Design Guidelines. *IEEE Transactions on Visualization and Computer Graphics*, 16(3):439–454, 2010.
- J11. N. Elmqvist, Y. Riche, N. Henry, J.-D. Fekete. Mélange: Space Folding for Visual Exploration. *IEEE Transactions on Visualization and Computer Graphics*, 16(3):468–483, 2010.

- J10. B. McDonnell, N. Elmqvist. Towards Utilizing GPUs in Information Visualization: Model and Implementation. *IEEE Transactions on Visualization and Computer Graphics* (IEEE Vis/InfoVis 2009 proceedings), 15(6):1105–1112, 2009. [37/142, 26% acc. rate]
- J9. N. Elmqvist, U. Assarsson, P. Tsigas. Dynamic Transparency for 3D Visualization: Design and Evaluation. *International Journal of Virtual Reality*, 8(1):65–78, 2009.
- J8. N. Elmqvist, P. Dragicevic, J.-D. Fekete. Rolling the Dice: Multidimensional Visual Exploration using Scatterplot Matrix Navigation. *IEEE Transactions on Visualization and Computer Graphics* (IEEE Vis/InfoVis 2008 proceedings), 14(6):1141–1148, 2008. [28/107, 26% acc. rate] (**Best paper award**) [1/28, 3.6% rate]
- J7. N. Elmqvist, P. Tsigas. A Taxonomy of 3D Occlusion Management for Visualization. *IEEE Transactions on Visualization and Computer Graphics*, 14(5):1095–1109, 2008.
- J6. N. Elmqvist, J. Stasko, P. Tsigas. DataMeadow: A Visual Canvas for Analysis of Large-Scale Multivariate Data. *Information Visualization*, 7(1):18–33, 2008.
- J5. N. Henry, H. Goodell, N. Elmqvist, J.-D. Fekete. 20 Years of Four HCI Conferences: A Visual Exploration. *International Journal of Human-Computer Interaction*, 23(3):239–285, 2007.
- J4. N. Elmqvist, P. Tsigas. View-Projection Animation for 3D Occlusion Management. *Computers & Graphics*, 31(6):864–876, 2007.
- J3. N. Elmqvist, P. Tsigas. CiteWiz: A Tool for the Visualization of Scientific Citation Networks. *Information Visualization*, 6(3):215–232, 2007.
- J2. N. Elmqvist, E. Tudoreanu. Occlusion Management in Immersive and Desktop 3D Virtual Environments: Theory and Evaluation. *International Journal of Virtual Reality*, 6(2):21–32, 2007. (**Best paper award**) [1/29, 3.5% rate]
- J1. N. Elmqvist, P. Tsigas. Animated Visualization of Causal Relations through Growing 2D Geometry. *Information Visualization*, 3(3):154–172, 2004, Palgrave Macmillan.

Conference Papers (peer-reviewed)

- C35. S. K. Badam, S. Chandrasegaran, N. Elmqvist, K. Ramani. Tracing and Sketching Performance using Blunt-Tipped Styli on Direct-Touch Tablets. In *Proceedings of the ACM Conference on Advanced Visual Interfaces*, to appear, 2014. [31/110, 28% acc. rate]
- C34. Z. Zhao, S. K. Badam, S. Chandrasegaran, D. G. Park, N. Elmqvist, L. Kisselburgh, K. Ramani. skWiki: A Multimedia Sketching System for Collaborative Creativity. In *Proceedings of the ACM CHI Conference on Human Factors in Computing Systems*, to appear, 2014. [471/2064, 22.8% acc. rate]
- C33. W. Benjamin, S. Chandrasegaran, D. Ramanujan, N. Elmqvist, S.V.N. Vishwanathan, K. Ramani. Juxtapoze: Supporting Serendipity and Creative Expression in Clipart Compositions. In *Proceedings of the ACM CHI Conference on Human Factors in Computing Systems*, to appear, 2014. [471/2064, 22.8% acc. rate]
- C32. A. M. M. Razip, A. Malik, S. Afzal, M. Potrawski, R. Maciejewski, Y. Jang, N. Elmqvist, D. Ebert. A Mobile Visual Analytics Approach for Law Enforcement Situation Awareness. In *Proceedings of the IEEE Pacific Symposium on Visualization*, to appear, 2014. [29/99, 29% acc. rate]
- C31. D. Ramanujan, W. Benjamin, W. Z. Bernstein, N. Elmqvist, K. Ramani. ShapeSift: Suggesting Sustainable Options in Design Reuse from Part Repositories. In *Proceedings of the ASME Conference on IDETC/CIE*, 2013. (**Best paper award**)
- C30. W. McGrath, B. Bowman, D. McCallum, J. D. Hincapié-Ramos, N. Elmqvist, P. Irani. Branch-Explore-Merge: Facilitating Real-Time Revision Control in Collaborative Visual Exploration. In *Proceedings of the ACM Conference on Interactive Tabletops and Surfaces*, pp. 235–244, 2012. [30/103, 29% acc. rate]
- C29. A. Malik, R. Maciejewski, Y. Jang, W. Huang, N. Elmqvist, D.S. Ebert. A Correlative Analysis Process in a Visual Analytics Environment. In *Proceedings of the IEEE Conference on Visual Analytics Science and Technology*, pp. 33–42, 2012. [29/104, 28% acc. rate]
- C28. S. Murugappan, F. Vinayak, N. Elmqvist, K. Ramani. Extended Multitouch: Recovering Touch Posture and Differentiating Users using a Depth Camera. In *Proceedings of the ACM Symposium on User Interface Software and Technology*, pp. 487–496, 2012. [62/289, 21% acc. rate]

- C27. W. Javed, S. Ghani, N. Elmqvist. GravNav: Using a Gravity Model for Multi-Scale Navigation. In *Proceedings of the ACM Conference on Advanced Visual Interfaces*, pp. 217–224, 2012. [54/193, 28% acc. rate]
- C26. W. Javed, S. Ghani, N. Elmqvist. PolyZoom: Multiscale and Multifocus Exploration in 2D Visual Spaces. In *Proceedings of the ACM CHI Conference on Human Factors in Computing Systems*, pp. 287–296, 2012. [370/1577, 23% acc. rate]
- C25. W. Javed, N. Elmqvist. Exploring the Design Space of Composite Visualization. In *Proceedings of the IEEE Pacific Symposium on Visualization*, pp. 1–8, 2012. [30/89, 34% acc. rate]
- C24. S. Ko, K. Kim, T. Kulkarni, N. Elmqvist. Applying Mobile Device Soft Keyboards to Collaborative Multitouch Tabletop Displays: Design and Evaluation. In *Proceedings of the ACM Conference on Interactive Tabletops and Surfaces*, pp. 130–139, 2011. [32/96, 33% acc. rate]
- C23. W. Javed, K. Kim, S. Ghani, N. Elmqvist. Evaluating Physical/Virtual Occlusion Management Techniques for Horizontal Displays. In *Proceedings of INTERACT*, pp. 391–408, 2011. [111/402, 28% acc. rate]
- C22. S. Ghani, N. Elmqvist. Improving Revisitation in Graphs through Static Spatial Features. In *Proceedings of Graphics Interface*, pp. 175–182, 2011. [28/75, 37% acc. rate]
- C21. B. Kwon, W. Javed, N. Elmqvist, J. S. Yi. Direct Manipulation Through Surrogate Objects. In *Proceedings of the ACM CHI Conference on Human Factors in Computing Systems*, pp. 627–636, 2011. [400/1540, 26% acc. rate]
- C20. P. Dragicevic, A. Bezerianos, W. Javed, N. Elmqvist, J.-D. Fekete. Temporal Distortion for Animated Transitions. In *Proceedings of the ACM CHI Conference on Human Factors in Computing Systems*, pp. 2009–2018, 2011. [400/1540, 26% acc. rate]
- C19. K. Kim, S. Ko, N. Elmqvist, D. Ebert. WordBridge: Using Composite Tag Clouds in Node-Link Diagrams for Visualizing Content and Relations in Text Corpora. In *Proceedings of the Hawaii International Conference on System Sciences (Visual Analytics Minitrack)*, pp. 1–8, 2011.
- C18. K. Kim, W. Javed, C. Williams, N. Elmqvist, P. Irani. Hugin: A Framework for Awareness and Coordination in Mixed-Presence Collaborative Information Visualization. In *Proceedings of the ACM Conference on Interactive Tabletops and Surfaces*, pp. 231–240, 2010. [34/120, 28% acc. rate]
- C17. W. Javed, N. Elmqvist. Stack Zooming for Multi-Focus Interaction in Time-Series Data Visualization. In *Proceedings of the IEEE Pacific Symposium on Visualization*, pp. 33–40, 2010. [27/84, 32% acc. rate]
- C16. J.-D. Fekete, N. Elmqvist, Y. Guiard. Motion-Pointing: Target Selection using Elliptical Motions. In *Proceedings of the ACM CHI Conference on Human Factors in Computing Systems*, pp. 289–298, 2009. [289/1180, 24% acc. rate].
- C15. N. Elmqvist, J.-D. Fekete. Semantic Pointing for Object Picking in Complex 3D Environments. In *Proceedings of Graphics Interface*, pp. 243–250, 2008. [34/85, 39% acc. rate]
- C14. N. Elmqvist, N. Henry, Y. Riche, J.-D. Fekete. Mélange: Space Folding for Multi-Focus Interaction. In *Proceedings of the ACM CHI Conference on Human Factors in Computing Systems*, pp. 1333–1342, 2008. [157/714, 22% acc. rate]
- C13. N. Elmqvist, E. Tudoreanu, P. Tsigas. Evaluating Motion Constraints for 3D Wayfinding in Immersive and Desktop Virtual Environments. In *Proceedings of the ACM CHI Conference on Human Factors in Computing Systems*, pp. 1769–1778, 2008. [157/714, 22% acc. rate]
- C12. N. Elmqvist, T.-N. Do, H. Goodell, N. Henry, and J.-D. Fekete. ZAME: Interactive Large-Scale Graph Visualization. In *Proceedings of the IEEE Pacific Symposium on Visualization*, pp. 215–222, 2008. [30/99, 30% acc. rate]
- C11. N. Elmqvist, E. Tudoreanu, P. Tsigas. Tour Generation for Exploration of 3D Virtual Environments. In *Proceedings of the ACM Symposium on Virtual Reality Software & Technology*, pp. 207–210, 2007. [24/75, 32% acc. rate]
- C10. N. Elmqvist, J. Stasko, P. Tsigas. DataMeadow: A Visual Canvas for Analysis of Large-Scale Multivariate Data. In *Proceedings of the IEEE Symposium on Visual Analytics Science & Technology*, pp. 187–194, 2007. [24/57, 42% acc. rate]

- C9. N. Elmqvist, U. Assarsson, P. Tsigas. Employing Dynamic Transparency for 3D Occlusion Management: Design Issues and Evaluation. In *Proceedings of INTERACT*, pp. 532–545, 2007. [76/230, 33% acc. rate]
- C8. N. Elmqvist, P. Tsigas. TrustNeighborhoods: Visualizing Trust in Distributed File Sharing Systems. In *Proceedings of the Eurographics/IEEE VGTC Symposium on Visualization*, pp. 107–114, 2007. [35/93, 38% acc. rate]
- C7. N. Elmqvist, P. Tsigas. A Taxonomy of 3D Occlusion Management Techniques. In *Proceedings of the IEEE Conference on Virtual Reality*, pp. 51–58, 2007. [26/130, 20% acc. rate]
- C6. N. Elmqvist, E. Tudoreanu. Evaluating the Effectiveness of Occlusion Reduction Techniques for 3D Virtual Environments. In *Proceedings of the ACM Symposium on Virtual Reality Software & Technology*, pp. 9–18, 2006. [26/73, 36% acc. rate]
- C5. N. Elmqvist, P. Tsigas. View Projection Animation for Occlusion Reduction. In *Proceedings of the ACM Conference on Advanced Visual Interfaces*, pp. 471–475, 2006.
- C4. S. Sandberg, C. Håkansson, N. Elmqvist, P. Tsigas, F. Chen. Using 3D Audio Guidance to Locate Indoor Static Objects. In *Proceedings of the Human Factors and Ergonomics Society 50th Annual Meeting*, pp. 1581–1584, 2006.
- C3. N. Elmqvist. BalloonProbe: Reducing Occlusion in 3D using Interactive Space Distortion. In *Proceedings of the ACM Symposium on Virtual Reality Software & Technology*, pp. 134–137, 2005. [22/61, 36% acc. rate]
- C2. N. Elmqvist, P. Tsigas. Causality Visualization Using Animated Growing Polygons. In *Proceedings of the IEEE Symposium on Information Visualization*, pp. 189–196, 2003. [29/90, 32% acc. rate]
- C1. N. Elmqvist, P. Tsigas. Growing Squares: Animated Visualization of Causal Relations. In *Proceedings of the ACM Symposium on Software Visualization*, pp. 17–26, 2003. [20/65, 31% acc. rate]

Book Chapters (peer-reviewed)

- BC2. M. Wybrow, N. Elmqvist, J.-D. Fekete, T. von Landesberger, J. J. van Wijk, B. Zimmer. Interaction in the Visualization of Multivariate Networks. In *Multivariate Network Visualization*, Lecture Notes in Computer Science 8380, Springer, pp. 97–126, 2014.
- BC1. N. Elmqvist. Distributed User Interfaces: State of the Art. In *Distributed User Interfaces: Designing Interfaces for the Distributed Ecosystem*, Springer, pp. 1–12, 2011.

Workshop Papers (peer-reviewed)

- W11. D. G. Park, N. Elmqvist, L. Kisselburgh. VisTwit: Talking Together about News Visualization with Twitter. Workshop paper presented at NewsVis 2013 at IEEE VIS 2013.
- W10. N. Elmqvist, J. S. Yi. Patterns for Visualization Evaluation. Workshop paper presented at *Beyond Time and Errors: Novel Evaluation Methods for Visualization* (BELIV 2012) at IEEE VisWeek 2012.
- W9. S. Ghani, N. Elmqvist, D. S. Ebert. MultiNode-Explorer: A Visual Analytics Framework for Generating Web-based Multimodal Graph Visualizations. Workshop paper presented at the *EuroVis Workshop on Visual Analytics* (EuroVA 2012) at EuroVis 2012.
- W8. W. McGrath, B. Bowman, N. Elmqvist, P. Irani. Branch-Explore-Merge: Real-time Revision Control for Conflict Resolution in Collaborative Visual Exploration. Workshop paper presented at *Data Exploration for Interactive Surfaces* (DEXIS 2011) at ACM ITS 2011, pp. 32–35, 2011.
- W7. N. Elmqvist. Embodied Human-Data Interaction. Workshop paper presented at *Embodied Interaction: Theory and Practice in HCI* at ACM CHI 2011.
- W6. N. Elmqvist. Munin: A Peer-to-Peer Middleware for Ubiquitous Visualization Spaces. Workshop paper presented at *Distributed User Interfaces* (DUI 2011) at ACM CHI 2011.
- W5. N. Elmqvist. Distributed User Interfaces: State of the Art. Workshop paper presented at *Distributed User Interfaces* (DUI 2011) at ACM CHI 2011.
- W4. N. Elmqvist. Mutually Linked Studies—Balancing Threats to Internal Validity and Ecological Validity in InfoVis Evaluation. Workshop paper presented at *BEyond time and errors: novel evaluation methods for Information Visualization* (BELIV 2010) at ACM CHI 2010.

- W3. K. Kim, T. Kulkarni, N. Elmqvist. Interaction Workspaces: Identity Tracking for Multi-user Collaboration on Camera-based Multi-touch Tabletops. Workshop paper presented at *Collaborative Visualization on Interactive Surfaces* (CoVIS 2009) at IEEE InfoVis 2009.
- W2. N. Henry, N. Elmqvist, J.-D. Fekete. A Methodological Note on Setting-Up Logging and Replay Mechanisms in InfoVis Systems. Workshop paper presented at *BEyond time and errors: novel evaLuation methods for Information Visualization* (BELIV 2008) at ACM CHI 2008.
- W1. N. Elmqvist, M. Fjeld, et al. 3DVN: A Mixed Reality Platform for Mobile Navigation Assistance. Workshop paper presented at *Mobile Spatial Interaction* (MSI) at ACM CHI 2007.

Posters and Demos (peer-reviewed)

- P3. W. Javed, N. Elmqvist. TraXplorer: Multi-Focus Interaction in Time-Series Data Visualization. Poster presented at the *IEEE Conference on Information Visualization*, 2009.
- P2. N. Elmqvist, P. Tsigas. TrustNeighborhoods in a Nutshell. Poster presented at the *ACM Symposium on Software Visualization*, pp. 189–190, 2006.
- P1. N. Elmqvist, P. Tsigas. Growing Squares: Visualizing Causal Relations. Demo presented at the *ACM Symposium on Software Visualization*, 2003.

INVITED TALKS

- T23. N. Elmqvist. *Visualization is Dead! (Long Live Visualization!)*. School of Computing, University of Utah (host: Chris Johnson), Salt Lake City, UT (March 18, 2014).
- T22. N. Elmqvist. *Ubiquitous Analytics: Interacting with Data Anywhere, Anytime*. Department of Computer Science, Stony Brook University (host: Yeijin Choi), Stony Brook, NY (February 20, 2014).
- T21. N. Elmqvist. *Visualization is Dead! (Long Live Visualization!)*. College of Information Studies, University of Maryland at College Park (host: Jen Golbeck), College Park, MD (February 5, 2014).
- T20. N. Elmqvist. *Ubiquitous Analytics: Interacting with Data Anywhere, Anytime*. SCI Institute, University of Utah (host: Chris Johnson), Salt Lake City, UT (December 11, 2013).
- T19. N. Elmqvist. *Action-as-Catalyst: The Role of Interaction for Big Data Analytics*. Faculty of Science, University of Ontario Institute of Technology (host: Christopher Collins), Oshawa, ON, Canada (December 6, 2013).
- T18. N. Elmqvist. *Ubiquitous Analytics: Interacting with Data Anywhere, Anytime*. Science on Tap, Lafayette, IN (April 25, 2013).
- T17. N. Elmqvist. *Analytics Anywhere, Anytime: Supporting Ubiquitous Sensemaking*. Department of Computer Science, Brown University (host: David Laidlaw), Providence, RI (November 2012).
- T16. N. Elmqvist. *Analytics Anywhere, Anytime: Supporting Ubiquitous Sensemaking*. Pfister Lab, School of Engineering & Applied Sciences, Harvard University (host: Hanspeter Pfister), Cambridge, MA (November 2012).
- T15. N. Elmqvist. *It's About Time: Analyzing, Forecasting, and Reasoning with Temporal Data*. Department of Computer Science, University of Texas at Austin (host: Chandrajit Bajaj), Austin, TX (September 2012).
- T14. N. Elmqvist. *Analytics Anywhere, Anytime: Supporting Ubiquitous Sensemaking*. School of Information, University of Texas at Austin (host: Luis Francisco-Revilla), Austin, TX (September 2012).
- T13. N. Elmqvist. *Visual Representations and Interaction Techniques for Multiple Time Series*. Department of Computer Science & Engineering, Chalmers University of Technology (host: Philippos Tsigas), Göteborg, Sweden (July 2010).
- T12. N. Elmqvist. *Visual Summaries: Sustaining the Utility of Information Visualization through Data Abstraction*. Department of Computer Science at University of Illinois (host: Brian Bailey), Urbana-Champaign, IL (April 2010).
- T11. N. Elmqvist. *CoE Explorer: Visualizing the DHS Centers of Excellence*. Presented at the C2I panel at the U.S. DHS University Network Summit 2010, Washington, D.C. (March 2010).
- T10. N. Elmqvist. *Dice Everywhere: Generalizing Scatterplot Matrix Navigation to Coordinated Multiple Views*. Microsoft Research (host: Nathalie Henry-Riche), Seattle, WA (December 2009).

- T9. N. Elmqvist. *Dice Everywhere: Generalizing Scatterplot Matrix Navigation to Coordinated Multiple Views*. Georgia Institute of Technology (host: John Stasko), Atlanta, GA (December 2009).
- T8. N. Elmqvist. *Visual Representations and Interaction Techniques for Multiple Time Series*. Human-Computer Interaction Laboratory (HCIL), University of Maryland (host: Catherine Plaisant), College Park, MD (September 2009).
- T7. N. Elmqvist. *Taking Control: Interaction for Visual Exploration*. Department of Computer Science, University of Manitoba (host: Pourang Irani), Winnipeg, MN, Canada (April 2008).
- T6. N. Elmqvist. *Introduction to Information Visualization*. IT-University (host: Morten Fjeld), Göteborg, Sweden (Sep 2006).
- T5. N. Elmqvist. *Image-Space Dynamic Transparency for Improved Object Discovery in 3D Environments*. Georgia Institute of Technology (host: John Stasko), Atlanta, GA (March 2006).
- T4. N. Elmqvist. *Causality Visualization*. Saab Systems, Järfälla, Sweden (January 2006).
- T3. N. Elmqvist, R. Karlsson. *3Dwm: The Three-Dimensional Workspace Manager*. LinuxTag 2001, Stuttgart, Germany (July 2001).
- T2. N. Elmqvist, R. Karlsson. *3Dwm: The Three-Dimensional Workspace Manager*. Astra-Zeneca, Göteborg, Sweden (May 2001).
- T1. N. Elmqvist, R. Karlsson. *3Dwm: The Three-Dimensional Workspace Manager*. Museum of Architecture, Stockholm, Sweden (April 2001).

INVITED WORKSHOPS AND MEETINGS

- IW7. National Science Foundation, “NSF Workshop/Retreat on the Science of Interaction for Visual Analytics,” Lake Louise, AB, Canada (May 2013).
- IW6. Dagstuhl seminar 13201, “Information Visualization - Towards Multivariate Network Visualization” (organizers: Andreas Kerren, Helen C. Purchase, Matthew Ward), Dagstuhl, Germany (May 2013).
- IW5. Google Faculty Summit 2012, “New Interactions in the Digital World,” Mountain View, CA (July 2012).
- IW4. National Science Foundation, “NSF Workshop on Science of Interaction for Data and Visual Analytics,” Austin, TX (March 2012).
- IW3. National Science Foundation, “NSF Workshop on Pervasive Computing at Scale (PeCS),” Seattle, WA (January 2011).
- IW2. Dagstuhl seminar 10241, “Information Visualization” (organizers: Andreas Kerren, Catherine Plaisant, John Stasko), Dagstuhl, Germany (June 2010).
- IW1. Pacific Northwest National Laboratories, “Precision Information Environments” (organizer: William Pike), Seattle, WA (December 2009).

GRANTS AND CONTRACTS

Research grants

- G16. K. Madhavan (PI), N. Elmqvist (Co-PI), M. Vorvoreanu (Co-PI), “Supplemental funding to DIA2,” National Science Foundation (NSF), \$363,820 (personal share \$121,273), Aug. 2013-Aug. 2015.
- G15. N. Elmqvist (PI), R. Chang (Co-PI), J. Chen (Co-PI), “Workshop: Doctoral Colloquium at IEEE VIS 2013,” National Science Foundation (NSF), \$20,000, Jul. 1 2013-Jun. 30, 2014.
- G14. N. Elmqvist (PI), “CAREER: Ubilytics: Harnessing Existing Device Ecosystems for Anywhere Sensemaking,” National Science Foundation (NSF), \$480,894, Feb. 2013-Jan. 2018.
- G13. K. Ramani (PI), N. Elmqvist (Co-PI), Lorraine Kisselburgh (Co-PI), “V-ICED: Visually-Integrated Cyber Exploratorium for Design,” National Science Foundation (NSF), \$750,000 (personal share \$180,000), Aug. 2012-Jul. 2015.
- G12. N. Elmqvist (PI), K. Ramani (Co-PI), “EAGER: SkWiki – A Sketch-based Wiki,” National Science Foundation (NSF), \$200,000 (personal share \$125,000), Jul. 2012-Jul. 2014.
- G11. N. Elmqvist (PI), Leland Wilkinson (Co-PI), Christopher G. Healey (Co-PI), “Workshop: Doctoral Colloquium at IEEE VisWeek 2012,” National Science Foundation (NSF), \$19,766, Jul. 2012-Jun. 2013.
- G10. D. Ebert (PI), N. Elmqvist (Co-PI), “Visual Analytics for Security Applications (VASA),” Department of Homeland Security (DHS), \$300,000 (personal share \$40,000), Jun. 2012-Mar. 2013.

- G9. N. Elmqvist (PI), "Context-Aware Navigation in Large Visual Spaces," Purdue Research Foundation (PRF) research grant, \$17,287, Aug. 2012-Jul. 2013.
- G8. K. Madhavan (PI), N. Elmqvist (Co-PI), M. Vorvoreanu (Co-PI), "Deep Insights Anytime, Anywhere (DIA2) – Central Resource for Characterizing the TUES Portfolio through Interactive Knowledge Mining and Visualizations," National Science Foundation (NSF), \$1.1M (personal share \$300,000), Sep. 2011-Aug. 2015.
- G7. K. Ramani (PI), N. Elmqvist (Co-PI), "Towards Design Aided by Computers (DAC): Pen and Touch-based Interfaces for Design Collaboration," PLM Center of Excellence, \$30,000 (personal share \$2,500), Jan. 2011-Jul. 2011.
- G6. N. Elmqvist (PI), "VACCINE Supplemental Funding: COE Explorer," U.S. Department of Homeland Security (DHS), \$75,000 (personal share), Sep. 2010-Mar. 2011.
- G5. N. Elmqvist (PI), "Visualization Mosaics: Effortless View Creation for Sensemaking," Google Research Award, \$50,000, Sep. 2010-Aug. 2011.
- G4. N. Elmqvist (PI), "Visual Summaries: Maintaining the Utility of Visualization through Data Abstraction," Purdue Research Foundation (PRF) research grant, \$18,145, Jun. 2010-May 2011.
- G3. D. Ebert, T. Collins, M. Boutin, W. Cleveland, E. Delp (PIs), N. Elmqvist (Co-PI), "VACCINE: Visual Analytics for Command, Control, Interoperability, National Security and Emergencies," U.S. Department of Homeland Security (DHS), \$15,000,000, 6 years (personal share \$270,000: 1 graduate research assistant, 25% AY effort, and 2 weeks of summer support for 6 years).
- G2. N. Elmqvist (PI), "Evaluating the Value and Effectiveness of Visualization," Purdue Research Foundation (PRF) research grant, \$18,145, Jun. 2009-May 2010.
- G1. N. Elmqvist (PI), "Multi-Focus Interaction for Time Series Visualization," Google Research Award, \$50,000, Mar. 2009-Feb. 2010.

Equipment grants

- EG2. N. Elmqvist (PI), NVidia Academic Partnership Program, ~\$2,000 (equipment value), Nov 2010.
- EG1. N. Elmqvist (PI), R. Karlsson, "Wearable computers equipment grant for the 3Dwm project," Xybernaut GmbH, €12,000 (equipment value), Jan. 1999-Aug. 1999.

Personal grants

- PG8. N. Elmqvist. International Travel Grant, Purdue College of Engineering, \$1,000, 2013.
- PG7. N. Elmqvist. Summer Faculty Grant, Purdue Research Foundation, \$8,000, 2012.
- PG6. N. Elmqvist. International Travel Grant, Purdue College of Engineering, \$1,000, 2010.
- PG5. N. Elmqvist. Strategic Planning Grant, Purdue College of Engineering, \$1,000, 2009.
- PG4. N. Elmqvist. ACM SigSoft, CAPS Program (ACM SoftVis 2006 attendance), \$220, 2006.
- PG3. N. Elmqvist. Chalmers Research Foundation, Ph.D. Student Grant, 20,000 SEK (\$3,000), 2005.
- PG2. N. Elmqvist. Lars Hierta Memorial Foundation, Independent Scientist, 20,000 SEK (\$3,000), 2005.
- PG1. N. Elmqvist. ACM SigSoft, CAPS Program (ACM SoftVis 2003 attendance), \$600, 2003.

HONORS AND AWARDS

- Purdue Student Graduate Mentoring Award (2014). Purdue Student Government.
- NSF CAREER (Faculty Early Career Development) award (2013). U.S. National Science Foundation.
- Best Paper Award (2013). ASME Conference on IDETC/CIE 2013, awarded for "ShapeSift: Suggesting Sustainable Options in Design Reuse from Part Repositories" (C31).
- IEEE TVCG Best Reviewer Award (2012). Institute of Electrical and Electronics Engineers (given to top three reviewers among nearly 3,000 reviewers for IEEE TVCG during October 2011 to October 2012).
- ACM Senior Membership (2013). Association for Computing Machinery.
- IEEE Senior Membership (2013). Institute of Electrical and Electronics Engineers.
- The Ruth and Joel Spira Outstanding Teacher Award (2012). Purdue University, School of Electrical and Computer Engineering (for teaching performance in ECE 264, Spring 2011 and 2012).
- Excellence in Research Award (2012). Purdue University, Vice President of Research (\$1M+ grant in AY11-12), awarded for DIA2 grant (G8) by National Science Foundation.

- Chicago Alumni New Faculty Award (2010). Purdue University, School of Electrical and Computer Engineering (startup grant funding).
- Seed for Success (2009). Purdue University, Vice President of Research (\$1M+ grant in AY08-09), awarded for VACCINE grant (G3) by U.S. Department of Homeland Security.
- Best Paper Award (2008). IEEE Conference on Information Visualization (InfoVis), awarded for “Rolling the Dice: Multidimensional Visual Exploration using Scatterplot Matrix Navigation” (J8).
- Best Paper Award (2008). International Journal of Virtual Reality (2007), awarded for “Occlusion Management in Immersive and Desktop 3D Virtual Environments: Theory and Evaluation” (J2).
- Postdoctoral Fellowship (2007). Microsoft Research – INRIA Centre, 1-year appointment (2007-2008).
- Claes Adelskiöld’s Medal (2005). Royal Swedish Academy of Science, 7000 SEK (\$1000).

SCIENTIFIC COMMUNITY SERVICE

Conference technical program committee memberships

- IEEE 3DUI program committee member
 - 3DUI 2014 – March 29-30, 2014, Minneapolis, MN
 - 3DUI 2013 – March 16-17, 2013, Orlando, FL
 - 3DUI 2012 – March 4-5, 2012, Orange County, CA
 - 3DUI 2011 – March 20-21, 2011, Singapore
 - 3DUI 2010 – March 20-21, 2010, Waltham, MA
- BELIV (Beyond time and errors: novel evaluation methods for visualization) program committee member
 - BELIV 2014 – November 10, 2014, Paris, France
 - BELIV 2012 – October 14-15, 2012, Seattle, WA
- ACM CHI associate chair (program committee member)
 - CHI 2014 – April 26-May 1, 2014, Toronto, ON, Canada
 - CHI 2012 – May 5-10, 2012, Austin, TX
 - CHI 2010 – April 10-15, 2010, Atlanta, GA
- IEEE EuroVis program committee member
 - EuroVis 2013 – June 17-21, 2013, Leipzig, Germany
 - EuroVis 2012 – June 5-8, 2012, Vienna, Austria
 - EuroVis 2011 – June 1-3, 2011, Bergen, Norway
- Graphics Interface 2011 program committee member (May 25-27, 2011, St. John’s, NL, Canada)
- IEEE InfoVis program committee member
 - InfoVis 2014 – November 9-14, 2014, Paris, France
 - InfoVis 2013 – October 13-18, 2013, Atlanta, GA
 - InfoVis 2011 – October 23-28, 2011, Providence, RI
 - InfoVis 2010 – October 24-29, 2010, Salt Lake City, UT
 - InfoVis 2009 – October 12-16, 2009, Atlantic City, NJ
- INTERACT (IFIP Human-Computer Interaction Conference) program committee member
 - INTERACT 2013 – September 2-6, 2013, Cape Town, South Africa
 - INTERACT 2009 – August 24-29, 2009, Uppsala, Sweden
- IEEE Lдав program committee member
 - Lдав 2013 – October 13-14, 2013, Atlanta, GA
 - Lдав 2012 – October 14-15, 2012, Seattle, WA
- NordiCHI 2008 program committee member (October 20-22, 2008, Lund, Sweden)
- IEEE PacificVis program committee member
 - PacificVis 2014 – March 4-7, 2014, Yokohama, Japan
 - PacificVis 2013 – February 27-March 1, 2013, Sydney, Australia
 - PacificVis 2011 – March 1-4, 2011, Hong Kong, China
 - PacificVis 2010 – March 2-5, 2010, Taipei, Taiwan
 - PacificVis 2009 – April 21-23, 2008, Beijing, China

- IEEE VAST program committee member
 - VAST 2014 – November 9-14, 2014, Paris, France
 - VAST 2012 – October 14-19, 2012, Seattle, WA
 - VAST 2011 – October 23-28, 2011, Providence, RI
 - VAST 2010 – October 24-29, 2010, Salt Lake City, UT

Conference organization

- IEEE InfoVis 2014 posters co-chair (November 9-14, 2014, Paris, France)
- IEEE EuroVis 2014 short papers co-chair (June 9-13, 2014, Swansea, United Kingdom)
- IEEE InfoVis 2013 doctoral colloquium chair (October 13-18, 2013, Atlanta, GA)
- IEEE InfoVis 2012 doctoral colloquium chair (October 14-19, 2012, Seattle, WA)
- IEEE InfoVis 2011 exhibits chair (October 23-28, 2011, Providence, RI)
- IEEE InfoVis 2010 tutorials chair (October 24-29, 2010, Salt Lake City, UT)

Conference session chair

- ACM CHI session chair
 - CHI 2012 – Programming, Performance, and Sensemaking (May 10, 2012, Austin, TX)
 - CHI 2010 – Making Meaning in Large Displays (April 12, 2010, Atlanta, GA)
- IEEE InfoVis session chair
 - InfoVis 2013 – Systems & Sets (October 13-18, 2013, Atlanta, GA)
 - InfoVis 2010 – Multi-dimensional Visualization (October 28, 2010, Salt Lake City, UT)
 - InfoVis 2009 – Multidimensional Data Visualization (October 15, 2009, Atlantic City, NJ)
- ACM ITS 2012 session chair – Understanding Users (November 14, 2012, Boston, MA)
- IEEE VAST session chair
 - VAST 2012 – Sensemaking and Collaboration (October 17, 2012, Seattle, WA)
 - VAST 2010 – Text Analytics (October 26, 2010, Salt Lake City, UT)

Journal reviewing

- [BMC] BMC Research Notes (2012)
- [COST] Computational Statistics (2009)
- [CG&A] IEEE Computer Graphics & Applications (2003)
- [CGF] Computer Graphics Forum (2012-2014)
- [EMSE] Empirical Software Engineering (2007)
- [FTHCI] Foundations and Trends in Human-Computer Interaction (2012)
- [IJCARs] International Journal of Computer Assisted Radiology and Surgery (2010)
- [IJHCS] International Journal of Human-Computer Studies (2007-2013)
- [IVS] Information Visualization (2007-2013)
- [IWC] Interacting with Computers (2012-2013)
- [JVLc] Journal of Visual Languages and Computing (2007-2009)
- [TiiS] ACM Transactions on Interactive Intelligent Systems (2012-2014)
- [ToCHI] ACM Transactions on Human-Computer Interaction (2011-2013)
- [TST] Tsinghua Science and Technology (2012)
- [TVCG] IEEE Transactions on Visualization and Computer Graphics (2008-2014)
- [TVCJ] The Visual Computer (2009)

Conference reviewing

- [3DUI] IEEE Symposium on 3D User Interfaces (2008-2014)
- [AVI] ACM Conference on Advanced Visual Interfaces (2010-2014)
- [BELIV] ACM Workshop on BEyond time and error in evaLuation of InfoVis (2010-2012)
- [CHI] ACM Conference on Human Factors in Computing Systems (2003-2014)
- [CSCW] ACM Conference on Computer Supported Collaborative Work (2008-2011, 2014)

- [EG] Conference of the European Association for Computer Graphics (2008, 2013)
- [EICS] ACM Conference on Engineering Interactive Computing Systems (2010)
- [EuroVis] Eurographics/IEEE Symposium on Visualization (2009-2014)
- [GI] Canadian HCC Society's Graphics Interface conference (2006-2008, 2011)
- [InfoVis] IEEE Conference on Information Visualization (2005, 2007-2014)
- [INTERACT] IFIP Conference on Human-Computer Interaction (2009-2011, 2013)
- [LDAV] IEEE Symposium on Large-Scale Data Analysis and Visualization (2012-2013)
- [MobileHCI] ACM Conference on Mobile Human-Computer Interaction (2012)
- [NordiCHI] Nordic Conference on Human-Computer Interaction (2006-2008)
- [OPODIS] International Conference on Principles of Distributed Systems (2006)
- [PacificVis] IEEE Pacific Visualization Symposium (2008-2014)
- [SciVis] IEEE Conference on Scientific Visualization (2005, 2007-2008)
- [Tabletop] ACM Conference on Interactive Tabletops and Surfaces (2009-2012)
- [TEI] ACM Conference on Tangible, Embedded, and Embodied Interaction (2011)
- [UIST] ACM Symposium on User Interface Software and Technology (2008, 2013)
- [VAST] IEEE Symposium on Visual Analytics Science and Technology (2006-2014)
- [VizSEC] IEEE Workshop on Visualization of Security (2005)
- [VR] IEEE Conference on Virtual Reality (2007-2008, 2014)
- [VRST] ACM Symposium on Virtual Reality Software and Technology (2007)

Grant reviewing

- Austrian Science Fund (FWF) – external reviewer (2012)
- U.S. National Science Foundation (NSF) – panelist (2008, 2011, 2014)
- Swiss National Science Foundation (SNSF) – external reviewer (2009)

ACADEMIC SOCIETY MEMBERSHIPS

Association for Computing Machinery (ACM)

- Senior Member of the ACM
- Senior Member of the ACM Special Interest Group for Human-Computer Interaction (SIGCHI)

Institute of Electrical and Electronics Engineers (IEEE)

- Senior Member of the IEEE
- Senior Member of the IEEE Computer Society

TEACHING EXPERIENCE

Purdue University

West Lafayette, IN, USA

Course Developer

- | | | |
|--|-----------|-----------------------------------|
| • ECE 395x Human-Computer Interaction | Fall 2009 | New experimental undergrad course |
| • ECE 495E Fundamentals of Computer Graphics | Fall 2011 | New permanent undergrad course |
| • ECE 695D Introduction to Visual Analytics | Fall 2009 | New permanent graduate course |

Instructor

- | | | |
|--|-------------|----------------------------|
| • ECE 264 Advanced C Programming | Spring 2013 | 48 undergraduate students |
| • ECE 264 Advanced C Programming | Spring 2012 | 48 undergraduate students |
| • ECE 264 Advanced C Programming | Spring 2011 | 38 undergraduate students |
| • ECE 364 Software Engineering Tools | Spring 2010 | ~60 undergraduate students |
| • ECE 495E Fundamentals of Computer Graphics | Spring 2009 | ~25 undergraduate students |
| • ECE 595E Visualization Techniques | Fall 2012 | 16 graduate students |
| • ECE 595E Visualization Techniques | Fall 2010 | 10 graduate students |
| • ECE 695D Introduction to Visual Analytics | Fall 2013 | 23 graduate students |

- ECE 695D Introduction to Visual Analytics Fall 2011 14 graduate students
- ECE 695D Introduction to Visual Analytics Fall 2009 12 graduate students

Project Advisor

- Table-It: Kinect-based Conference Meeting System AY 2012-13 5 undergraduate students
- Speech and Audiology Clinic EPICS team Spring 2010 12 undergraduate students

Chalmers University of Technology

Göteborg, Sweden

Course Developer

- Simulation Engines 2003-2005 600 slides, 14 lectures
- 3D Real-Time Graphics 2002-2003 50 slides, 2 lectures

Instructor

- Simulation Engines Fall 2004 50 students
- Simulation Engines Fall 2005 40 students

Project Advisor

- Collaborative Editing (project) 2003-2004 8 students
- Wearable Platforms for AR & VR (project) 2002-2003 8 students

Teaching Assistant

- Object-Oriented Software Engineering 2002, 2003 100+ undergraduate students
- Data Structures 2001 30 undergraduate students

STUDENTS ADVISED

Purdue University

West Lafayette, IN, USA

Graduated Ph.D. Students – Major Advisor (Academic Committee Chair)

- Sohaib Ghani (Ph.D. 2013), *Advanced Visualization, Navigation, and Interaction in Graphs: Theory, Design, and Evaluation*, School of Electrical and Computer Engineering, Purdue University, June 2013.
 - Now postdoctoral researcher, Mecca, Saudi Arabia
- Waqas Javed (Ph.D. 2013), *Spatializing Visual Exploration: Transforming Interactive Visual Analysis into Spatial Representations to Aid Sensemaking*, School of Electrical and Computer Engineering, Purdue University, May 2013.
 - Now HCI researcher, GE Global Research, San Ramon, CA, USA

Graduated Masters Students – Major Advisor (Academic Committee Chair)

- Salman Javed (Masters 2014), Non-thesis option, School of Electrical & Computer Engineering, Purdue University, May 2014.
 - Major advisor 2011–2014 (break 2012–2013)
- KyungTae Kim (Masters 2010), *A Framework to Support Awareness and Coordination in Mixed-Presence Collaborative Information Visualization for Multi-Touch Tabletop Displays*, School of Electrical & Computer Engineering, Purdue University, November 2010.
 - Major advisor, funded research assistant (Sep. 2009–Dec. 2010)
 - Now software engineer at LG Electronics, Seoul, South Korea

Graduated Ph.D. Students – Academic Committee Member

- Hanjun Xian (Ph.D. 2013), *Scholarly Collaboration in Engineering Education: From Big-Data Scientometrics to a User-Centered Software Design*, School of Engineering Education, Purdue University, Oct. 2013 (Major advisor: Krishna Madhavan).
 - Committee member (Dec. 2010–Oct. 2013)
 - Now research software engineer, Bing team, Microsoft Corporation, Redmond, WA

- Jaeyoung Park (Ph.D. 2013), *Effect of Contact Location Information on Haptic Shape Perception*, School of Electrical & Computer Engineering, Jun. 2013 (Major advisor: Hong Z. Tan).
 - Committee member (Jan. 2010–Jun. 2013)
 - Now research scientist at Korea Institute of Science and Technology
- Bum chul Kwon (Ph.D. 2013), *Visualization Aids to Support the Consumer Decision Making Process*, School of Industrial Engineering, Purdue University, May 2013. (Major advisor: Ji Soo Yi)
 - Committee member (Jan. 2011–May 2013)
 - Now postdoctoral researcher, University of Konstanz, Germany
- Sundar Murugappan (Ph.D. 2012), *Natural User Interfaces for Engineering Design*, School of Mechanical Engineering, Purdue University, March 2012. (Major advisor: Karthik Ramani)
 - Committee member (2010–2012)
 - Now User Experience Researcher at GE Global Research, San Ramon, CA
- Yi Fang (Ph.D. 2011), *Heat-Driven Framework for Interpretation of Data in Networks*, School of Mechanical Engineering, Purdue University, October 2011. (Major advisor: Karthik Ramani)
 - Committee member (2011–2012)
 - Now assistant professor, electrical engineering, New York University Abu-Dhabi

Graduated Masters Students – Academic Committee Member

- Silvia Oliveros-Torres (Masters 2013), *Interactive Multivariate Data Exploration for Risk-based Decision Making*, School of Electrical & Computer Engineering, Purdue University, April 2013.
 - Committee member (Jan. 2011–Apr. 2013)
- Hammad Haseeb (Masters 2013), *Impact of Access Control on Retrieval Performance of Spatiotemporal Data*, School of Electrical & Computer Engineering, Purdue University, Mar. 2013.
 - Committee member (Nov. 2012–Mar. 2013).
- Arpan Kusari (Masters 2011), School of Civil Engineering, Purdue University, December 2011.
 - Committee member (2011).
 - Now Ph.D. student at University of Houston, Houston, TX.
- Michael Wilga (Masters 2011), School of Visual & Performing Arts, Purdue University, July 2011.
 - Committee member (2009–2011).
 - Now audio artist at Electronic Arts, San Francisco Bay Area, CA.

Ph.D. Thesis Major Advisor (Academic Committee Chair)

- Deok Gun Park (Ph.D. student), College of Engineering, Dec. 2012–present (funded graduate research assistant).
- Yuetling Wong (Ph.D. student), Department of Computer Science, Oct. 2012–present (funded graduate research assistant).
- Sriram Karthik Badam (Ph.D. student), School of Electrical & Computer Engineering, Sep. 2012–present (funded graduate research assistant).
- Zhenpeng Zhao (Ph.D. student), School of Electrical & Computer Engineering, Dec. 2011–present (funded graduate research assistant).

Ph.D. and Masters Committee Member

- Senthil Chandrasegaran (Ph.D. student), School of Mechanical Engineering, Feb. 2014–present.
- Cecil Piya (Ph.D. student), School of Mechanical Engineering, Jan. 2014–present.
- Udayan Umapathi (Masters student), School of Electrical & Computer Engineering, Oct. 2013–present.
- Shuying Feng (Masters student), School of Electrical & Computer Engineering, Oct. 2013–present.
- Sang Ho Yoon (Ph.D. student), School of Mechanical Engineering, Oct. 2013–present.
- Rachel Whitson (Masters student), Department of Computer Graphics Technology, Sep. 2013–present.
- Sukwon Lee (Ph.D. student), School of Industrial Engineering, Jan. 2013–present.
- Samah Gad (Ph.D. candidate), Department of Computer Science, Virginia Tech, Nov. 2012–present.
- Brandon B. Gardner (Masters student), School of Electrical & Computer Engineering, Oct. 2012–present.

- Sujin Jang (Ph.D. student), School of Mechanical Engineering, Oct. 2012–present.
- Nadra Guizani (Ph.D. student), School of Electrical & Computer Engineering, Sep. 2012–present.
- William Benjamin (Ph.D. candidate), School of Mechanical Engineering, Aug. 2012–present.
- Xin Chen (Ph.D. candidate), School of Engineering Education, Mar. 2012–present.
- Junghoon Chae (Ph.D. student), School of Electrical & Computer Engineering, Nov. 2011–present.
- Haeyong Chung (Ph.D. candidate), Department of Computer Science, Virginia Tech, Oct. 2011–present.
- Sungahn Ko (Ph.D. candidate), School of Electrical & Computer Engineering, Sep. 2011–present.
- Daniel Meija (Ph.D. student), School of Electrical & Computer Engineering, Aug. 2011–present.
- F.N.U. Vinayak (Ph.D. student), School of Mechanical Engineering, Apr. 2011–present.
- Matthew Beard (Ph.D. candidate), Department of Forestry and Natural Resources, Mar. 2011–present.
- Hyungju Park (Ph.D. candidate), School of Electrical & Computer Engineering, Jan. 2011–present.
- Abish Malik (Ph.D. candidate), School of Electrical & Computer Engineering, Apr. 2010–present.

Undergraduate Research Advisor

- Eli Raymond Fisher, SRC Fellow, School of Electrical & Computer Engineering, May 2012–Sep. 2013.
- Brian Bowman, School of Electrical & Computer Engineering, Aug. 2010–May 2012.
 - Now software engineer at Microsoft Corporation
- Will McGrath, School of Electrical & Computer Engineering, Aug. 2010–May 2012.
 - Now Ph.D. student in Computer Science Department at Stanford University
- Stephen MacNeil, School of Electrical & Computer Engineering, Aug. 2009–May 2012.
 - Now Ph.D. student in Department of Computer Science at UNC Charlotte
- Tejas Kulkarni, School of Electrical & Computer Engineering, Jan. 2009–May 2010.
 - Now Ph.D. student in Department of Brain and Cognitive Sciences at Massachusetts Institute of Technology (MIT)
- Bryan McDonnell, School of Electrical & Computer Engineering, Jan.–Aug. 2009.
 - Now Associate Developer at Spot Trading LLC

Chalmers University of Technology Göteborg, Sweden

Master's Thesis Advisor (advisory only)

- C. Håkansson and S. Sandberg, *Using 3D Audio Guidance for Static Object Location*, Chalmers University of Technology and IT University, 2006.
- J. Tibell, *Multiplayer Physics*, Department of Computer Science and Engineering, Chalmers University of Technology, 2006.
- T. Bengtsson and H. Svensson, *.NET Platform Evaluation for Spotfire Visualization*, Department of Computer Science and Engineering, Chalmers University of Technology, 2004.
- K. Höök, *Interaction with Products in Immersive 3D Environments*, Department of Computer Science and Engineering, Chalmers University of Technology, 2004.
- M. Kahnberg, *Design and Construction of a Three-Dimensional Role-Playing Game*, Department of Computer Science and Engineering, Gothenburg University, 2004.

PRESS AND MEDIA COVERAGE

TV coverage

- InsideScience TV (2013). “Turning Your World into a Touch Screen,” August 14.
- WLFI-TV NewsChannel 18 (2012). “Purdue researchers turn any surface into interactive touch screen,” October 12.

Online coverage

- DISCOVER Magazine Online (2013). “Creating a Touch-Screen on a Countertop,” March 18.
- Purdue News (2012). “New interactive system detects touch and gestures on any surface,” October 10.
- Journal and Courier Online (2012). “PolyZoom: New Tool from Purdue,” May 12.

- Purdue News (2012). “'PolyZoom' is a new tool to view, study graphics,” April 24.
- Purdue News (2011). “NSF grant to create new resource to accelerate 'STEM' innovations,” October 18.
- Purdue Website (2011). “5 Students Who... Are Innovation Makers,” June 1 (on undergraduate advisee Will McGrath’s research project).
- Purdue News (2011). “'Surrogates' aid design of complex parts and controlling video games,” May 10.
- eCampus News (2011). “New software connects interactive displays online,” March 22.
- Purdue News (2010). “Software allows interactive tabletop displays on Web,” November 29.
- Chalmers News Service (2006). “Finding your way in Cyberspace,” December 12.
- Slashdot (2001). “Slashback: Solidity, Sneakiness, Recovery,” November 6.
- Slashdot (2001). “Nicklas Elmqvist On 3Dwm Project’s Progress,” August 22.
- LinuxPower (2001). “Adding a new dimension to the desktop with 3Dwm,” August 21. (interview)
- Slashdot (2000). “3Dwm Updates,” November 3.
- Slashdot (1999). “3D Window Manager,” November 3.

Print media coverage

- DISCOVER Magazine (2013), “Computing on the Kitchen Counter,” pp. 18-19, April issue.
- Journal and Courier (2012). “PolyZoom: New Tool from Purdue,” May 12.
- Purdue Exponent (2010). “Purdue research expands touch technology,” December 6.

UNIVERSITY AND DEPARTMENT SERVICE

Purdue University

College of Engineering

- Strategic Planning Team – Virtual Reach and Web Presence (Fall 2009)
- Perception-based Engineering Faculty Search Committee (2009-2010)

Purdue University

School of Electrical and Computer Engineering

- Purdue Hacker Club – Faculty Advisor (2013-present)
- ECE Graduate Committee (2011-2014)
- ECE Graduate Admissions Committee (2008-present)
- ECE Faculty Search Committee (2008, 2009, 2010, 2012, 2013)

Chalmers University of Technology

Department of Computer Science & Engineering

- Graduate Committee (Ph.D. student representative) (2003-2006)
- Distributed Computing and Systems Seminar (coordinator) (2004-2006)
- Graduate Admissions Committee for Interaction Design master’s program (member) (2004-2005)

REFERENCES

- **David S. Ebert**, Silicon Valley Professor of Electrical and Computer Engineering; Fellow of the IEEE
School of Electrical & Computer Engineering
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West Lafayette, IN 47907-2035, USA
Phone: +1 (765) 494-9064, Fax: +1 (765) 494-6951
E-mail: ebertd@purdue.edu
- **Jean-Daniel Fekete**, Professor of Computer Science; IEEE InfoVis steering committee
INRIA Unité de Recherche Saclay - Île-de-France
Bât 650, Université Paris-Sud
91405 Orsay Cedex, France
Phone : +33 1 69 15 64 94, Fax : +33 1 69 15 65 86
E-mail: jean-daniel.fekete@inria.fr
- **Robert J. K. Jacob**, Professor of Computer Science; Member of the ACM CHI Academy
Department of Computer Science
Tufts University

Medford, MA 02155, USA
Phone: +1 (617) 627-2225, Fax: +1 (617) 627-2227
E-mail: jacob@cs.tufts.edu

- **John T. Stasko**, Professor of Interactive Computing; Associate Chair
GVU Center (Division of Interactive and Intelligent Computing)
Georgia Institute of Technology
Atlanta, GA 30332-0280, USA
Phone: +1 425 707-0555 (+1 404 894-5617), Fax: +1 404 894-3146
E-mail: stasko@cc.gatech.edu
- **Jarke van Wijk**, Professor of Computer Science; IEEE InfoVis steering committee member
Department of Mathematics and Computer Science
Eindhoven University of Technology
P.O Box 513, 5600 MB, Eindhoven, The Netherlands
Phone: +31 40 247 4579, Fax: +31 40 243 6685
E-mail: vanwijk@win.tue.nl