Kevin Ponto, Ph.D.

Audrey Rothermel Bascom Professor
Design Studies Department
School of Human Ecology
and
Wisconsin Institute for Discovery
University of Wisconsin-Madison

Webpage: https://pages.discovery.wisc.edu/~kponto/

Design Studies
3130 Nancy Nicholas Hall
1300 Linden Drive
Madison, WI 53715

Wisconsin Institute for Discovery
330 N. Orchard St. Room 3176
Madison, WI 53715
☎ 608.316.4330
✉ kbponto@wisc.edu

Research Interests

My research revolves around the utilization of *virtual, mixed and augmented reality* to simulate the experience of *real-life spaces for real-world outcomes*. My *long-term goal* is to develop new technologies, tools and methods to bridge the physical/digital divide.

Education

2010 – 2012 **Post-Doctoral Researcher**,
University of Wisconsin-Madison.

2007 – 2010 **Doctor of Philosophy in Computer Science Engineering**,
University of California, San Diego, September 2010.
Computer Science Track

2004 – 2006 **Master of Science in Engineering**,
University of California, Irvine, September 2006.
Arts Computation Engineering

2000 – 2004 **Bachelor of Science in Computer Engineering**,
University of Wisconsin-Madison, May 2004.
Computer Engineering Track

Awards

SoHE PROUD Award,
2024 *Performance-based Recognition for Outstanding and Unwavering Dedication*,
School of Human Ecology, University of Wisconsin Madison.

2023 **Audrey Rothermel-Bascom Professorship**,
Bascom Named Professorship,
School of Human Ecology, University of Wisconsin Madison.

2020 **Best Paper Honorable Nominee**,
A Comparative Analysis of 3D User Interaction: How to Move Virtual Objects in Mixed Reality, Kang, H., Shin, J., Ponto, K.,
IEEE Conference on Virtual Reality 2020.

SoHE PROUD Award,
Performance-based Recognition for Outstanding and Unwavering Dedication,
School of Human Ecology, University of Wisconsin Madison.

2017 **Wade and Bev Fetzer Fund for Excellence**,
Award for Demonstrated Excellence (Scholarship),
School of Human Ecology, University of Wisconsin Madison.

Joy H. Dohr Award for Design Excellence,
Exploratory look at consumer behavior in real and simulated 3D virtual reality environment,
Kang, H., Ponto, K.,
Department of Design Studies, University of Wisconsin Madison.

2014 **Best Poster Honorable Mention**,
Assessing Exertions: How an increased level of immersion unwittingly leads to more natural behavior,
Ponto, K., Chen, K., Tredinnick, R., Radwin, R.,
IEEE Conference on Virtual Reality 2014.

2013 **Best Paper Nominee**,
Perceptual Calibration for Immersive Display Environments, Ponto, K., Gleicher, M., Radwin, R., Shin, H.J.,
IEEE Conference on Virtual Reality 2013.

2012 **Winners of the WARF Discovery Challenge**,
Volumetric visualization of dynamic time varying data, Ponto, K., Roy, C., Tredinnick, R., WARF Discovery Challenge Poster Symposium.

2007 **Prix Ars Electronica Honorary Mention in the Category of Hybrid Art**,
Pigeon Blog, Da Costa, B., Hazegh, C., Ponto, K.

2006 **Adobe Emerging Artist Award**,
Pigeon Blog, Da Costa, B., Hazegh, C. and Ponto, K.

Intellectual Property

US Patent App. 16/657,197 / WARF P170222US03
3 *Systems, Methods, And Media For Detecting Manipulations Of Point Cloud Data*

2 US Patent App. 15/996,096 / WARF 15996096
Systems, Methods, And Media For Hierarchical Progressive Point Cloud Rendering

1 US Patent App. 12/920,056 / UC Case No: 2011-812
CGLX Core Engine

Funded Projects and Proposals

(37 Awards, $12,869,823 in funds)

Federal Proposals and Projects **(13 Awards, $9,936,563 in funds)**

Principal Investigator **Timber Sale Administration Virtual Reality Training**,
USDA, Forest Service,
Principal Investigator: K. Ponto,
Total Costs $230,573 (Start Date: 09-01-2022 End Date: 12-31-2024).

Principal Investigator **Utilizing the Library System and Virtual Reality Learning Experiences To Engage Rural and LatinX Communities in Polar Research**,
DRL 2116046 National Science Foundation,
Principal Investigator: K. Ponto,
Total Costs $2,775,986 (Start Date: 01-01-2022 End Date: 09-31-2026).

Collaborator Subaward PI
Understanding Plant Endosomal Sorting Mechanisms in Plants,
National Science Foundation ,
Principal Investigator: M. Otegui,
Total Costs $949,996 (Start Date: 07-01-2021 End Date: 06-30-2025)
Subaward $21,090.

Co-Principal Investigator
EasyVizAR: Edge-supported, Accessible, and Secure, Augmented Reality for Improved Visualization in Indoor First Responder Scenarios.,
National Institute of Standards and Technology,
Principal Investigator: S. Banerjee,
Total Costs $1,798,769 (Start Date: 07-01-2021 End Date: 06-31-2024).

Principal Investigator
Becoming Joey: Promoting Informal Learning through Embodiment in an Adelie Penguin Virtual Reality Experience.,
OPP 2028478 National Science Foundation,
Principal Investigator: K. Ponto,
Total Costs $300,000 (Start Date: 01-01-2021 End Date: 12-31-2022).

Co-Principal Investigator
Simulating Activities of Daily Living for the Assessment of Fall Risk in Older Adults,
CHS 1815506 National Science Foundation,
Principal Investigator: A. Mason,
Total Costs $499,999 (Start Date: 9-01-2018 End Date: 08-31-2021).

Principal Investigator
Exploring the Universe from Antarctica Supplement,
OPP 1612504 National Science Foundation,
Principal Investigator: K. Ponto,
Total Costs $60,000 (Start Date: 09-01-2018 End Date: 8-31-2019).

Principal Investigator
Analyzing the Impact of Virtual Reality and 3D Capture Technology on Crime Scene Investigation,
2016-IJ-CX-0017 Department of Justice,
Principal Investigator: K. Ponto,
Total Costs $265,103 (Start Date: 01-31-2017 End Date: 12-31-2018).

Principal Investigator
Exploring the Universe from Antarctica,
OPP 1612504 National Science Foundation,
Principal Investigator: K. Ponto,
Total Costs $299,834 (Start Date: 09-01-2016 End Date: 8-31-2018).

Co-Investigator
Virtualized Homes: Tools for Better Discharge Planning,
R03 HS024623 Agency for Healthcare Research and Quality,
Principal Investigator: P. Brennan / M. Broecker / E. Mendonca,
Total Costs $99,895 (Start Date: 01-01-2016 End Date: 12-31-2016).

Co-Investigator **e3iVR: Conference on ethics in investigational and interventional uses of immersive VR**,
R13 HS024833 Agency for Healthcare Research and Quality,
Principal Investigator: E. Gill,
Total Costs $32,079 (Start Date: 07-01-2016 End Date: 3-31-2017).

Co-Investigator **Project Arclight: Analytics for the Study of 20th Century Media**,
Digging into Data 2013,
Principal Investigator: E. Hoyt / C. Acland,
Total Costs $124,986 (Start Date: 01-31-2014 End Date: 01-31-2016).

Principal Investigator (2016-2018)
Co-Principal Investigator (2013-2016)
vizHOME: A context-based health information needs assessment strategy,
RO1 PA11199 Agency for Healthcare Research and Quality,
Principal Investigator: P. Brennan / K. Ponto,
Total Costs $2,499,343 (Start Date: 09-30-2013 End Date: 09-29-2018).

Foundation Proposals and Projects **(5 Awards, $488,382 in funds)**

Co-Principal Investigator **Jan Hondzinski: Visiting Scholar Program**,
McPherson Eye Research Institute,
Principal Investigator: A. Mason,
Total Costs $3,000 (Start Date: 3-01-2023 End Date: 12-22-2023).

Co-Principal Investigator **Developing a Novel Augmented Reality Tool for Home Assessments**,
RRF Foundation for Aging,
Principal Investigator: J. Shin,
Total Costs $249,000 (Start Date: 7-01-2021 End Date: 08-31-2024).

Co-Principal Investigator **Living independently at home: Effect of home medications on functional independence, acute stress response, and adaptive behaviors of persons with disabilities.**,
Tommy Thompson Foundation,
Principal Investigator: J. Shin,
Total Costs $130,181 (Start Date: 07-01-2018 End Date: 06-31-2020).

Principal Investigator **Point Cloud Data in Virtual and Augmented Reality**,
WARF Accelerator Program,
Principal Investigator: K. Ponto,
Total Costs $83,201 (Start Date: 10-01-2018 End Date: 12-31-2020).

Co-Principal Investigator **A Virtual Tour through Mount Horeb Area History**,
Mount Horeb Historical Society,
Principal Investigator: R. Tredinnick / K. Ponto,
Total Costs $23,000 (Start Date: 02-01-2017 End Date: 12-31-2017).

Corporate Proposals and Projects **(5 Awards, $1,836,923 in funds)**

Principal Investigator
Novel Methods for Hail Detection,
American Family Insurance Data Science Institute,
Principal Investigator: K. Ponto,
Total Costs $149,241.00 (Start Date: 01-01-2025 End Date: 12-31-2025).

Senior Personnel
Shared Autonomy for Monitoring (LANL),
TRIAD National Security, LLC.,
Principal Investigator: M. Gleicher,
Total Costs $1,400,000 (Start Date: 12-07-2022 End Date: 09-30-2024).

Principal Investigator
Developing Novel Mixed Reality Tools for Consumer Insurance Documentation,
American Family Insurance Data Science Institute,
Principal Investigator: K. Ponto,
Total Costs $109,642 (Start Date: 01-01-2022 End Date: 12-31-2022).

Principal Investigator
Developing a Novel 3D Capture Based Automated Inventory System for Insurance Documentation,
American Family Insurance Data Science Institute,
Principal Investigator: K. Ponto,
Total Costs $108,041 (Start Date: 08-01-2020 End Date: 07-31-2021).

Principal Investigator
3D Visualization Prototype for Training and Demos,
Johnson (S.C.) and Sons, Inc,
Principal Investigator: K. Ponto,
Total Costs $69,999 (Start Date: 08-01-2015 End Date: 06-30-2016).

University Proposals and Projects **(8 Awards, $423,592 in funds)**

Co-Principal Investigator
Developing a Novel Augmented Reality Tool for Home Assessments (UW-Madison Fall Research Competition),
Office of the Vice Chancellor for Research and Graduate Education,
Principal Investigator: J. Shin,
Total Costs $43,924 (Start Date: 7-01-2023 End Date: 08-31-2024).

Co-Principal Investigator
Simulating Activities of Daily Living for the Assessment of Fall Risk in Older Adults,
Pandemic-Affected Research Continuation Initiative 2 (PARCI 2) Office of the Vice Chancellor for Research and Graduate Education (OVCRGE),
Principal Investigator: A. Mason,
Total Costs $35,100 (Start Date: 01-01-2022 End Date: 12-31-2022).

Principal Investigator
Developing a novel augmented reality tool for home assessments.,
University of Wisconsin - Madison Fall Competition,
Principal Investigator: K. Ponto,
Total Costs $24,000 (Start Date: 07-01-2021 End Date: 06-31-2022).

Principal Investigator
Designing Next Generation Marketplaces,
University of Wisconsin Fall Research Competition,
Principal Investigator: K. Ponto,
Total Costs $39,270 (Start Date: 07-01-2017 End Date: 06-30-2018).

Co-Principal Investigator
Bridging Neuroscience, Engineering and Plant Biology to Develop Novel Methods for Live-Cell Imaging in Three-Dimensions,
University of Wisconsin Interdisciplinary Competition,
Principal Investigator: P. Krysan,
Total Costs $89,464 (Start Date: 07-01-2015 End Date: 06-30-2016).

Co-Principal Investigator
Interactive Projection and Automation for Live Entertainment Performance,
University of Wisconsin Fall Research Competition,
Principal Investigator: D. Lisowski,
Total Costs $105,000 (Start Date: 07-01-2014 End Date: 06-30-2015).

Co-Principal Investigator
Project Arclight: Analytics and Visualization for the Study of 20th Century Media,
University of Wisconsin Fall Research Competition,
Principal Investigator: E Hoyt,
Total Costs $53,000 (Start Date: 07-01-2014 End Date: 06-30-2015).

Principal Investigator
Making the Virtual a Cost Effective Reality,
University of Wisconsin Fall Research Competition,
Principal Investigator: K. Ponto,
Total Costs $33,834 (Start Date: 07-01-2014 End Date: 06-30-2015).

School Proposals and Projects **(3 Awards, $128,408 in funds)**

Principal Investigator
Audrey Rothermel-Bascom Professorship,
School of Human Ecology,
Principal Investigator: K. Ponto,
Total Costs $60,000 (Start Date: 7-01-2023 End Date: 08-31-2028).

Co-Principal Investigator
Bridge: Developing a Novel Augmented Reality Tool for Home Assessments,
School of Human Ecology,
Principal Investigator: J. Shin,
Total Costs $43,408 (Start Date: 7-01-2023 End Date: 08-31-2024).

Co-Principal Investigator
What the moon saw, interactive performance research,
School of Education Grand Challenges Engage Grant,
Principal Investigator: D. Lisowski,
Total Costs $25,000 (Start Date: 11-01-2017 End Date: 10-30-2019).

Departmental Proposals **(3 Awards, $55,955 in funds)**

Principal Investigator
Interior Architecture VR Equipment Proposal,
School of Human Ecology,
Principal Investigator: K. Ponto,
Total Costs $10,500.

Principal Investigator
Novel Methods for the Study of Health in the Home,
Center for Design and Material Culture / SoHE Research and Grant Investment Initiative,
Principal Investigator: K. Ponto,
Total Costs $4,500.

Principal Investigator
Designing a Commodity Hybrid Virtual Reality System,
Wisconsin Institute for Discovery / School of Human Ecology,
Principal Investigator: K. Ponto,
Total Costs $40,955.

Publications and Research

Journal Articles (Peer-Reviewed)

J.37 Tredinnick, R., Schloss, K., **Ponto, K.**, "Past, Present, and Future Thoughts on Immersive Visualization Laboratories Through the Story of the Wisconsin Institute for Discovery Virtual Environments Group" *PRESENCE: Virtual and Augmented Reality*, (2024) pp. 1-22.

J.36 Shin, J., Shields, R., Lee, J., Skrove, Z., Tredinnick, R., **Ponto, K.**, Fields, B., "Quality and Accessibility of Home Assessment mHealth Apps for Community Living: Systematic Review" *JMIR mHealth and uHealth* , (2024) v. 12 n. 1 pp. e52996.

J.35 Fields, B., Skrove, Z., Tredinnick, R., Sprecher, B., Lee, J., Shields, R., **Ponto, K.**, Shin, J., "THE USABILITY AND ACCEPTABILITY OF THE AUGMENTED REALITY HOME ASSESSMENT TOOL (ARHAT)" *Innovation in Aging*, (2023) v. 7 pp. 1142-1143.

J.34 Fields, B., Fitzpatrick, M., Kinney, L., Lee, J., Sprecher, B., Tredinnick, R., **Ponto, K.**, Shin, J., "Evaluating the Acceptability and Appropriateness of the Augmented Reality Home Assessment Tool (ARHAT): Qualitative Descriptive Study)" *JMIR aging*, (2023) v. 6 pp. e44525.

J.33 Skrove, Z., Fitzpatrick, M., Kinney, L., Sprecher, B., Tredinnick, R., **Ponto, K.**, Shin, J., Fields, B., "Development of the augmented reality home assessment tool (arhat): A qualitative descriptive study" *The American Journal of Occupational Therapy*, (2023) v. 77 pp. 7711500020p1-7711500020p1.

J.32 Padilla, A., Peer, A., **Ponto, K.**, Pickett, K., Mason, A., , "Gait variability in spatiotemporal gait parameters in young adults" *Journal of Sport & Exercise Psychology*, (2023) v. 45, pp. S40-S41.

J.31 Mason, A., Padilla, A., Peer, A., Toepfer, M., **Ponto, K.**, Pickett, K., "The role of the visual environment on characteristics of over-ground locomotion in natural and virtual environments" *International Journal of Human-Computer Studies*, (2023) v. 169 pp. 102929.

J.30 **Ponto, K.**, Trednnick, R., "Opportunities for utilizing consumer grade 3D capture tools for insurance documentation" *International Journal of Information Technology*, (2023) v.14, n. 6, pp. 2757-2766.

J.29 Padilla, A., Peer, A., Pickett, K., **Ponto, K.**, Mason, A., , "Effects of Habituation on Spatiotemporal Gait Measures in Younger Adults" *Journal of Sport & Exercise Psychology*, (2022) v. 44, pp. S47.

J.28 Shin, J., Her-Xiong, Y., Tredinnick, R., **Ponto, K.**, "Toward Understanding Everyday Lives of Older Adults: A Methodological Exploration" *The Gerontologist*, (2021) In Print.

J.27 Toepfer, M., Padilla, A., **Ponto, K.**, Mason, A., Pickett, K.,, "The Effects of Systematic Environmental Manipulation on Gait of Older Adults" *Healthcare*, (2020) v. 8, n. 4, p. 386.

J.26 Tredinnick, R., Cors, R., Madsen, J., Gagnon, D., Bravo-Gllart, S., Sprecher, B., **Ponto, K.**, "Exploring the Universe from Antarctica-An Informal STEM Polar Research Exhibit" *Journal of STEM Outreach*, (2020) pp. 1-13.

J.25 Kang, H., Shin, J., **Ponto, K.**, "How 3D Virtual Reality Stores Can Shape Consumer Purchase Decisions: The Roles of Informativeness and Playfulness" *Journal of Interactive Marketing* , (2020) v. 49, 70-85.

J.24 Werner, N., Tong, M., Nathan-Roberts, D., Smith, C., Tredinnick, R., **Ponto, K.**, Melles, M., Honnakker, P., "The desktop, or the top of the desk? The relative usefulness of household features for personal health information management" *Patient Experience Journal*, (2020) v. 7, n. 1, pp. 75-83.

J.23 Jolliff, A., Hoonakker, P., **Ponto, K.**, Tredinnick, R., Casper, G., Martell, T., Werner, N., "The desktop, or the top of the desk? The relative usefulness of household features for personal health information management" *Applied Ergonomics*, (2020) v. 82, 102912.

J.22 Tredinnick, R., Smith, S., **Ponto, K.**, "A cost-benefit analysis of 3d scanning technology for crime scene investigation" *Forensic Science International: Reports*, (2019) v. 1, 100025.

J.21 **Ponto, K.**, Smith, S., Tredinnick, R., "Methods for detecting manipulations in 3D scan data" *Digital Investigation*, (2019) v. 30, pp. 101-107.

J.20 Tredinnick, R., Gill, E., Udelhoven, D., **Ponto, K.**, "Virtual Reality as an Agent of Preservation" *Forum Journal*, (2018) v. 32 n. 1 pp. 22-29. ***Front Cover Article***

J.19 Werner, N., Jolliff, A., Casper, G., Martell, T., **Ponto, K.**, "Home is where the head is: a distributed cognition account of personal health information management in the home among those with chronic illness" *Ergonomics*, (2018) v. 61, n. 8, pp. 1065-1078.

J.18 Chen, K. B., Sesto, M. E., **Ponto, K.**, Leonard, J., Mason, A., Vanderheiden, G., Williams, J., Radwin, R.G, "Use of Virtual Reality Feedback for Patients with Chronic Neck Pain and Kinesiophobia" *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, (2017) v. 25, n. 8, pp. 1240-1248.

J.17 Broecker, M., **Ponto, K.**, Tredinnick, R., Casper, G., Brennan, P. F. , "SafeHOME: Promoting Safe Transitions to the Home" *Studies in health technology and informatics*, (2016) v. 220, p. 51.

J.16 Long, D., Hoyt, E., Tran, A., **Ponto, K.**, Hughes, K., "Who's Trending in 1910s American Cinema: Exploring ECHO ad MHDL at Scale with Arclight" *The Moving Image*, (2016) v. 16, n. 1, pp. 57-81.

J.15 Hughes, K., Hoyt, E., Long, D., **Ponto, K.**, Tran, A., "Hacking Radio History's Data: Station Call Letter, Digitized Magazines, and Scaled Entity Search" *Media Industries Journal*, (2015) 2 (2).

J.14 Brennan, P. F., **Ponto, K.**, Casper, G., Tredinnick, R., Broecker, M., "Virtualizing living and working spaces: Proof of concept for a biomedical space-replication methodology" *Journal of Bioinformatics*, (2015) v. 57, pp. 53-61

J.13 Hoyt, E., **Ponto, K.**, Roy, C., "Visualizing and Analyzing the Hollywood Screenplay with ScripThreads" *Digital Humanities Quarterly*, 8.4 (2014).

J.12 Chen, K., **Ponto, K.**, Tredinnick, R., Radwin, R.G.„ "Virtual Exertions Evoking the Sense of Exerting Forces in Virtual Reality Using Gestures and Muscle Activity" *Human Factors: The Journal of the Human Factors and Ergonomics Society*, (2014) v. 57, n. 4, pp. 658-673.

J.11 **Ponto, K.**, Kohlmann, J., Tredinnick, R., "DSCVR: designing a commodity hybrid virtual reality system" *Virtual Reality*, (2014) pp. 1 - 14.

J.10 Chen, K., Kimmel, R., Bartholomew, A., **Ponto, K.**, Gleicher, M., Radwin, R. , "Manually locating physical and virtual reality objects" *Human Factors*, (2014) v. 56, n. 6, pp. 1163-1176.

J.9 **Ponto, K.**, Gleicher, M., Radwin, R., Shin, H.J., "Perceptual Calibration for Immersive Display Environments" *IEEE Transactions on Visualization and Computer Graphics*, (2013) v. 19, n. 4, pp. 691-700. ***Best Long Paper Nominee***

J.8 Brennan, P.F., **Ponto, K.**, Radwin, R., Kreutz, K., "Envisioning the future of home care: applications of immersive virtual reality" *Studies in health technology and informatics*, (2013) v. 192, n. 1, pp. 599-602.

J.7 **Ponto, K.**, Kohlmann, J., Gleicher, M., "Effective Replays and Summarization of Virtual Experiences." *IEEE Transactions on Visualization and Computer Graphics*, (2012) v. 18 n. 4 pp. 607-616.

J.6 **Ponto, K.**, Doerr, K., Kooker, J., Wypych, T., Kuester, F., "CGLXTouch: A multi-user multi-touch approach for ultra-high-resolution collaborative workspaces" *Future Generation Computer Systems*, (2011) v. 27 n. 6 pp. 649-656.

J.5 DeFanti, T., Acevedo, D., Ainsworth, R., Brown, M., Cutchin, S., Dawe, G., Doerr, K., Johnson, A., Knox, C., Kooima, R., Kuester, F., Leigh, J., Long, L.,Otto, P., Petrovic, V., **Ponto, K.**, Prudhomme, A., Rao, R., Renambot, L., Sandin, D., Schulze, J., Smarr, L., Srinivasan, M., Weber, and P., Wickham, G., "The future of the CAVE" *Central European Journal of Engineering*, (2010). pp. 1-22.

J.4 **Ponto, K.**, Doerr, K., Kuester, F., "Giga-Stack: A Method for Visualizing Giga-pixel Layered Imagery on Massively Tiled Displays" *Future Generation Computer Systems*, (2010) v. 26, n. 5, pp. 693-700.

J.3 **Ponto, K.**, Seracini, M., Kuester, F., "Wipe-Off: an intuitive interface for exploring ultra-large multi-spectral data sets for cultural heritage diagnostics" *Computer Graphics Forum*, (2009) v. 28, n. 8, pp. 2291-2301.

J.2 **Ponto, K.**, Kuester, F., Nideffer, R., Penny, S., "Tangled Reality" *Virtual Reality*, (2008) v. 12 n. 1 pp. 37-45.

J.1 **Ponto, K.**, Kuester, F., Nideffer, R., Penny, S., "Virtual Bounds: a teleoperated mixed reality" *Virtual Reality*, (2006) v. 10 n. 1 pp. 41-47.

Conference Papers (Peer-Reviewed)

C.27 Gagnon, D., **Ponto, K.**, Verbeke, M., Nathan, M., Kopp, K., Tredinnick, R.„ "Waddle: Developing Empathy for Adélie Penguins By Direct Embodiment in Virtual Reality" *Joint International Conference on Serious Games*, (2023) pp. 227-233.

C.26 Kang, H.J., Shin, J., **Ponto, K.**, "A Comparative Analysis of 3D User Interaction: How to Move Virtual Objects in Mixed Reality" *2020 IEEE Conference on Virtual Reality and 3D User Interfaces (VR)* , (2020) pp. 275-284. ***Best Paper Nominee***

C.25 Peer, A., **Ponto, K.**, "Measuring Visual Acuity and Stereo Accuracy as Mediated by Immersive Displays" *In 2020 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)* , (2020) pp. 219-223.

C.24 Peer, A., **Ponto, K.**, "Mitigating Incorrect Perception of Distance in Virtual Reality through Personalized Rendering Manipulation" *In proceedings of IEEE Conference on Virtual Reality*, (2019) pp. 244-250.

C.23 Hoonakker, P., Casper, G., Smith, C. A., Tredinnick, R., Werner, N., **Ponto, K.**, "Healthcare in a Virtual Environment: Workload and Simulation Sickness in a 3D CAVE" *Congress of the International Ergonomics Association*, (2018) pp. 281-289.

C.22 Smith, C. A., Casper, G., Tredinnick, R., **Ponto, K.**, "Virtualizing Homes to Study Health Decisions" *AMIA 2017: Workshop on Interactive Systems in Healthcare (WISH)*, (2017) 57, 53-61.

C.21 **Ponto, K.**, Tredinnick, R., Casper, G., "Simulating the Experience of Home Environments" *International Conference on Virtual Rehabilitation 2017*, (2017) pp. 1-9.

C.20 Peer, A., **Ponto, K.**, "Evaluating Perceived Distance Measures In Room-Scale Spaces Using Consumer-Grade Head Mounted Displays" *3D User Interfaces (3DUI), 2017 IEEE Symposium on*, (2017) pp. 83–86.

C.19 **Ponto, K.**, Lisowski, D., Fan, S., "Designing Extreme 3D User Interfaces for Augmented Live Performances" *3D User Interfaces (3DUI), 2016 IEEE Symposium on*, (2016) pp. 169-172.

C.18 Broecker, M., **Ponto, K.**, "Transient Motion Groups for Interactive Visualization of Time-Varying Point Clouds" *In proceedings of IEEE Aerospace Conference*, (2016) pp. 1-10.

C.17 Subramaniam, N.A., **Ponto, K.**, "Hierarchical Plane Extraction (HPE): An Efficient Method For Extraction Of Planes From Large Pointcloud Datasets" *Proceedings of ACADIA 2014*, (2014) pp. 627-636.

C.16 Hoyt, E., Hughes, K., Long, D., Tran, A., **Ponto, K.**, "Scaled Entity Search: A Method for Media Historiography and Response to Critiques of Big Humanities Data Research" *IEEE Big Humanities Data workshop*, (2014) pp. 51-59.

C.15 Chen, K., **Ponto, K.**, Sesto, M., Radwin, R.G.,, "Influence of altered visual feedback on neck movement for a virtual reality rehabilitative system" *Proceedings of the Human Factors and Ergonomics*, (2014) pp. 693-697.

C.14 Radwin, R.G., Chen, K., **Ponto, K.**, Tredinnick, R, "Virtual Exertions Physical Interactions in a Virtual Reality CAVE for Simulating Forceful Tasks" *Proceedings of the Human Factors and Ergonomics*, (2013) pp. 967-971.

C.13 Brennan, P. F., Nicolalde, D. F., **Ponto, K.**, Kinneberg, M., Freese, V., Paz, D, "Cultivating Imagination: Development and Pilot Test of a Therapeutic Use of an Immersive Virtual Reality CAVE" *In AMIA Annual Symposium Proceedings*, (2013) vol. 2013, p. 135.

C.12 Kimball, J., **Ponto, K.**, Wypych, T., Kuester, F., "RSVP: Ridiculously Scalable Video Playback on Clustered Tiled Displays" *IEEE ISM 2013*, (2013) pp. 9-16.

C.11 Huynh, A., **Ponto, K.**, Yu-Min, A., Kuester, F., "Visual analytics of inherently noisy crowdsourced data on ultra high resolution displays" *In proceedings of IEEE Aerospace Conference*, (2013) pp. 1-8.

C.10 **Ponto, K.**, Gleicher, M., Radwin, R., Shin, H.J., "Perceptual Calibration for Immersive Display Environments" *In proceedings of IEEE Conference on Virtual Reality*, (2013) Printed in TVCG.

C.9 **Ponto, K.**, Tredinnick, R., Bartholomew, A., Roy, C., Szafir, D., Greenheck, D., Kohlmann, J., "SculptUp: A Rapid, Immersive 3D Modeling Environment" *3D User Interfaces (3DUI), 2013 IEEE Symposium on*, (2013) pp. 199-200.

C.8 **Ponto, K.**, Shin, H.J., Kohlmann, J., Gleicher, M., "Online Real-Time Presentation of Virtual Experiences for External Viewers" *Proceedings of the 18th ACM Symposium on Virtual Reality Software and Technology*, (2012) pp. 45-52.

C.7 **Ponto, K.**, Kimmel, R., Kohlmann, J., Bartholomew, A., Radwin, R., "Virtual Exertions: a user interface combining visual information, kinesthetics and biofeedback for virtual object manipulation" *3D User Interfaces (3DUI), 2012 IEEE Symposium on*, (2012) pp. 85-88.

C.6 **Ponto, K.**, Kohlmann, J., Gleicher, M., "Effective Replays and Summarization of Virtual Experiences." *In proceedings of IEEE Conference on Virtual Reality.*, (2012) Printed in TVCG.

C.5 Wypych, T., Yamaoka, S., **Ponto, K.**, Kuester F., "System for Inspection of Large High-Resolution Radiography Datasets" *In proceedings of IEEE Aerospace Conference*, (2011) pp. 1-9.

C.4 Yamaoka, S., **Ponto, K.**, Doerr, K., Kuester, F., "Interactive Image Fusion in Distributed Visualization Environments" *In proceedings of IEEE Aerospace Conference*, (2011) pp. 1-7.

C.3 Olsen, M.J., **Ponto, K.**, Kimball, J., Seracini, M., Kuester, F., "2D open-source editing techniques for 3D laser scans" *In proceedings of CAA 2010*, (2010) p. 47-50.

C.2 **Ponto, K.**, Kuester, F, "DIGI-Vis: Distributed Interactive Geospatial Information Visualization" *In proceedings of IEEE Aerospace Conference*, (2010) pp. 1-7.

C.1 **Ponto, K.**, Wypych, T., Doerr, K., Yamaoka, S., Kimball, J., Kuester, F., "VideoBlaster: a distributed, low-network bandwidth method for multimedia playback on tiled display systems" *In proceeding of IEEE International Symposium on Multimedia*, (2009) pp. 201-206.

Conference Poster Papers (Peer-Reviewed)

CPP.14 **Ponto, K.**, Deniz, H., Tredinnick, R., Çağıltay, B., Shields, R., Sprecher, B., Fields, B., Shin, J., "The Benefits of Utilizing Augmented Reality as a Tool for Assessments" *2023 IEEE International Symposium on Mixed and Augmented Reality*, (2023) pp. 393-398.

CPP.13 **Ponto, K.**, Tredinnick, R., Shields, R., Fields, B., Shin, J., "Utilizing AR as a Tool for Assessing Accessibility in the Home" *Proceedings of the 29th ACM Symposium on Virtual Reality Software and Technology*, (2023) pp. 1-2.

CPP.12 **Ponto, K.**, Tredinnick, R., Verbeke, M., Kopp, K., Swanson, L., Gagnon, D., "Waddle: using virtual penguin embodiment as a vehicle for empathy and informal learning" *Proceedings of the 29th ACM Symposium on Virtual Reality Software and Technology*, (2023) pp. 1-2.

CPP.11 **Ponto, K.**, Tredinnick, R.,, "High-Resolution Interactive Immersive Renderings of Real-World Environments" *2020 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)*, (2020) pp. 825-826.

CPP.10 Peer, A., Ullich, P., **Ponto, K.**, "Vive Tracking Alignment and Correction Made Easy" *In proceedings of IEEE Conference on Virtual Reality*, (2018) pp. 653-654.

CPP.9 Peer, A., **Ponto, K.**, "Preliminary Exploration: Perceived Egocentric Distance Measures in Room-Scale Spaces using Consumer-Grade Head Mounted Displays" *In proceedings of IEEE Conference on Virtual Reality*, (2017) pp. 275-276.

CPP.8 Tredinnick, R., Boettcher, B., Smith, S., Solovy, S., **Ponto, K.**, "Uni-CAVE: A Unity3D Plugin for Non-head Mounted VR Display Systems" *In proceedings of IEEE Conference on Virtual Reality*, (2017) pp. 393-394.

CPP.7 Tredinnick, R., Broecker, M. **Ponto, K.**, "Progressive Feedback Point Cloud Rendering for Virtual Reality Display" *In proceedings of IEEE Conference on Virtual Reality*, (2016) pp. 301-302.

CPP.6 Peer, A., **Ponto, K.**, "Perceptual Space Warping: Preliminary Exploration" *In proceedings of IEEE Conference on Virtual Reality*, (2016) pp. 261-262.

CPP.5 Tredinnick, R., Broecker, M. **Ponto, K.**, "Experiencing Interior Environments: New Approaches for the Immersive Display of Large-Scale Point Cloud Data" *In proceedings of IEEE Conference on Virtual Reality*, (2015) pp. 297-298.

CPP.4 Gill, E., Brennan,P., **Ponto, K.**, Tredinnick, R., Broecker, M., Chen, K., "The Living Environments Laboratory" *In proceedings of IEEE Conference on Virtual Reality*, (2015) n.p.

CPP.3 **Ponto, K.**, Chen, K., Tredinnick, R., Radwin, R., "Assessing Exertions: How an increased level of immersion unwittingly leads to more natural behavior" *IEEE Conference on Virtual Reality 2014*, (2014) pp 107-108. ***Best Poster Honorable Mention***

CPP.2 Nicolalde, D.F., Freese, V., **Ponto, K.**, Tredinnick, R., Kinneberg, M. , "Applying Kanban to Healthcare via Immersive 3D Virtual Reality" *3D User Interfaces (3DUI), 2014 IEEE Symposium on*, (2014) 149-150.

CPP.1 Tredinnick, R. **Ponto, K.**, "Say It To See It: A Speech Based Immersive Model Retrieval System" *3D User Interfaces (3DUI), 2013 IEEE Symposium on*, (2014) pp. 181-182.

Conference Presentations (Peer-Reviewed)

PR.18 **Ponto, K.**, Bastoni, A., Haggerty, M., "Working with Rural Communities" *2023 National Science Foundation (NSF) Advancing Informal STEM Learning (AISL) Awardee Meeting*, Arlington, Virginia. December 6-8, 2023.

PR.17 Madsen, J., Gagnon, D., **Ponto, K.**, Roman, D., Treinnick, R., Verbeke, M., "Expedition VRctica: Story-based Virtual Reality Experiences to Engage New Audiences in Polar Science" *AGU (American Geophysical Union) Fall Meeting*, Chicago, Illinois. December 16, 2022

PR.16 Fitzpatrick, M., Kinney, L.* Sprecher, B., Tredinnick, R., **Ponto, K.**, Shin, J., Fields, B., " Development of the Augmented Reality Home Assessment Tool (ARHAT): A Qualitative Descriptive Study" *Annual Conference of the American Occupational Therapy Association*, Lisbon, Portugal (Online)July 4 – 8, 2022

PR.15 Shin, J., **Ponto, K.**, Fields, B., Tredinnick, R., Sprecher, B., Shields, R., Lee, J.*, "Developing a Novel Augmented Reality Tool for Home Assessments " *the 27th Conference of International Association of People-Environment Studies (IAPS)*, Madison, Wisconsin. August 13, 2018

PR.14 **Ponto, K.**, Cors, R., Gagnon, D., Madsen, J., Tredinnick, R., "Discover IceCube VR Communicating complex Astrophysics Experientially " *Make Play Learn*, Madison, Wisconsin. August 13, 2018.

PR.13 **Ponto, K.**, Tredinnick, R., Smith, S., "Impact of Virtual Reality and 3D Capture Technology on Crime Scene Investigations" *Wisconsin Association for Identification*, Elkhart Lake, Wisconsin. March 15, 2018.

PR.12 **Ponto, K.**, Tredinnick, R., Casper, G., "Simulating the Experience of Home Environments" *International Conference on Virtual Rehabilitation 2017*, Montreal, Canada. June 20-22, 2017.

PR.11 **Ponto, K.**, "A Retrospective on the Field of Virtual Reality" *Ethics in Investigational & Interventional Uses of Immersive Virtual Reality (e3iVR)*, Madison, Wisconsin. April 26-27, 2017.

PR.10 **Ponto, K.**, Lisowski, D., Fan, S., "Designing Extreme 3D User Interfaces for Augmented Live Performances" *3D User Interfaces (3DUI), 2016 IEEE Symposium on*, Greenville, SC. March 19-20, 2016.

PR.9 Gill, E., Brennan, P., **Ponto, K.**, Tredinnick, R., Broecker, M., Chen, K., "The Living Environments Laboratory" *IEEE Conference on Virtual Reality 2015*, Arles, France. March 23-27, 2015.

PR.8 Subramaniam, N.A., and **Ponto, K.**, "Hierarchical Plane Extraction (HPE): An Efficient Method For Extraction Of Planes From Large Pointcloud Datasets" *ACADIA 2014*, Los Angeles, CA. October 23-25, 2014.

PR.7 **Ponto, K.**, Gleicher, M., Radwin, R., and Shin, H.J., "Perceptual Calibration for Immersive Display Environments" *IEEEVR 2013*, Orlando, Florida. March 16-20, 2013.

PR.6 **Ponto, K.**, Shin, H.J., Kohlmann, J., and Gleicher, M., "Online Real-Time Presentation of Virtual Experiences for External Viewers" *The 18th ACM Symposium on Virtual Reality Software and Technology*, Toronto, Canada, December 10-12, 2012.

PR.5 **Ponto, K.**, "Experience Design: Exploring the Medium of Virtual Reality" *Midwest Fiber Arts Educators Network (MFEAN) 2012*, Madison, Wisconsin. November 8-11, 2012.

PR.4 **Ponto, K.**, Kimmel, R., Kohlmann, J., Bartholomew, A., and Radwin, R., "Virtual Exertions: a user interface combining visual information, kinesthetics and biofeedback for virtual object manipulation" *IEEE Symposium on 3D User Interfaces 2012*, Orange County, California, March 4-5, 2012.

PR.3 **Ponto, K.**, Kohlmann, J., and Gleicher, M., "Effective Replays and Summarization of Virtual Experiences" *IEEE VR 2012*, Orange County, California. March 4-8, 2012.

PR.2 **Ponto, K.** and Kuester, F., "DIGI-Vis: Distributed Interactive Geospatial Information Visualization" *IEEE Aerospace Conference*, Big Sky, Montana. March 6-13, 2010.

PR.1 **Ponto, K.** Wypych, T. Doerr, K. Yamaoka, S. Kimball, J. Kuester, F., "VideoBlaster: a distributed, low-network bandwidth method for multimedia playback on tiled display systems" *IEEE International Symposium on Multimedia*, San Diego, California. December 14-16, 2009.

Conference Demonstrations (Invited or Peer-Reviewed)

D.10 **Ponto, K.**, Tredinnick, R.„ "High-Resolution Interactive Immersive Renderings of Real-World Environments" *2020 IEEE Conference on Virtual Reality and 3D User Interfaces*, Atlanta, GA. March 23-25, 2020.

D.9 **Ponto, K.**, Tredinnick, R.„ "3D Scanning and VR technology" *Hyper Innovation Summit*, Madison, WI. November 15, 2018.

D.8 **Ponto, K.**, Tredinnick, R., Casper, G., "Simulating the Experience of Home Environment" *Business Best Practices & Emerging Technologies Conference*, Madison, WI. September 24, 2018.

D.7 **Ponto, K.**, Tredinnick, R., Casper, G., "Simulating the Experience of Home Environment" *International Conference on Virtual Rehabilitation 2017*, Montreal, Canada. June 22, 2017.

D.6 **Ponto, K.**, Tredinnick, R., Chase, A., Rush, M., Gagnon, D., Bravo, S., "Polar Virtual Reality Exhibit Prototype" *IceCube Collaboration meeting*, Madison, May 2-6, 2017.

D.5 **Ponto, K.**, "vizHOME: Using LiDAR to Create Point Cloud Representations of Home Interiors" *Medicine Meets Virtual Reality*, Los Angeles, CA. April 7-9, 2016.

D.4 **Ponto, K.**, Tredinnick, R., Bartholomew, A., Roy, C., Szafir, D., Greenheck, D., Kohlmann, J., "SculptUp: A Rapid, Immersive 3D Modeling Environment" *3D User Interfaces (3DUI) Contest*, Orlando, FL. March 16-17, 2013.

D.3 Kuester, F., **Ponto, K.**, Yamaoka, S., Doerr, K., "HIPerSpace Nano" *NVISION 2008*, San Jose, CA. August 25-27, 2008.

D.2 Da Costa, B. Hazegh, C. **Ponto, K.**, "Pigeon Blog" *Ubicomp 2006, the Eighth International Conference of Ubiquitous Computing*, Irvine, California. September 17-21, 2006.

D.1 Da Costa, B., Hazegh, C., **Ponto, K.**, "Pigeon Blog" *Inter-Society for Electronic Arts Annual Symposium*, San Jose, California. August 7-13, 2006.

Conference Posters (Lightly Peer-Reviewed)

CP.8 Kopp, K., **Ponto, K.**, Tredinnick, R., Gagnon, D., "Assessing the Effects of Olfaction on the Sense of Embodiment in Virtual Reality" *2023 WID Symposium*, Madison, Wisconsin. November 15, 2023.

CP.7 Samdahl, A., Ashby, P., Sprecher, B., **Ponto, K.**, "Public Engagement through Virtual Reality" *UW Showcase*, Madison, Wisconsin. March 8, 2022.

CP.6 Peer, A., **Ponto, K.**, "Perceptual Space Warping: Preliminary Exploration" *8th Annual McPherson Eye Research Institute Vison Science Poster Session*, Madison, Wisconsin. October 4, 2016.

CP.5 Kelly, C., Soo, X. Y., Tandifor, P., Xiong, K., **Ponto, K.**, "Creating Virtual Environments: Modeling Change In 3D" *Undergraduate Research Symposium*, Madison, Wisconsin. April 14, 2016.

CP.4 Sylvestre, J., **Ponto, K.**, "TEB, A Thermoelectric Band for Personal Body Temperature Regulation" *Undergraduate Research Symposium*, Madison, Wisconsin. April 16, 2015.

CP.3 Broecker, M., Hernandez, E., Nelson, M., Tucker, C., **Ponto, K.**, "Online Point Cloud Exploration" *Undergraduate Research Symposium*, Madison, Wisconsin. April 9, 2015.

CP.2 **Ponto, K.**, Kohlmann, J., Gleicher, M., "Effective Replays and Summarization of Virtual Experiences." *MathBio 4.*, Madison, Wisconsin. October 18-19, 2012.

CP.1 **Ponto, K.**, Roy, C., Tredinnick, R., "Volumetric visualization of dynamic time varying data" *WARF Discovery Challenge Poster Symposium*, Madison, Wisconsin. May 23, 2012. ***Best Poster Winner***

Workshops (Lightly Peer-Reviewed)

W.2 Lisowski, D., Fan, S., **Ponto, K.**, "Behind the Curtain: ALICE Project" *Art + Scholarship Mellon Workshop*, Madison, Wisconsin. May 11th, 2015.

W.1 Szafir, D., **Ponto, K.**, "Panoramic Imagery of Physical Locations inside Immersive Environments" *Midgraph 2012*, Chicago, Illinois, November 30-December 2, 2012.

Book Chapters (Peer-Reviewed)

B.5 Lisowski, D., **Ponto, K.**, Fan, S., Probst, C., Sprecher, B., "Augmented Reality into Live Theatrical Performance." *In Springer Handbook of Augmented Reality* , pp. 433-450. Springer, Cham. (2023).

B.4 Tredinnick, R. and **Ponto, K.**, "UniCAVE: A Distributed Rendering System for Unity3D" *VR Gems*, CRC Press, (2018).

B.3 Hoyt, E., Tran, A., Long, D., Hughes, K., **Ponto, K.**, "Searching, Mining, and Interpreting Media History's Big Data" *Routledge Companion to Media Studies and the Digital Humanities*, ed. Jentery Sayers The Routledge Companion to Media Studies and Digital Humanities, pp. 433-442.

B.2 He, Z., **Ponto, K.**, Kuester, F., "Collaborative Visual Analytics Environment for Imaging Genetics" *Collaborative Computational Technologies for Biomedical Research*, (pp. 467-490. (2011)

B.1 Seracini, M., Kuester, F., De Vita, M., Olsen, M.J., **Ponto, K.**, Kimball, J., Corazzini, S., and Bonini, C., "Alla riscoperta di Palazzo Medici Riccardi, Campagna di indagini diagnostiche per lo studio e la caratterizzazione dell' evoluzuione architettonica del monumento [In English: "Rediscovering Palazzo Medici Riccardi, Diagnostic Investigation to Study and Characterize the Monument's Architectural Evolution"]" *(2010) pp. 241-249.*,

Thesis and Dissertation

T.2 **Ponto, K.**, "Building a foundation for human centric multi-dimensional data analysis" *Ph.D. Dissertation*, University of California, San Diego. 2010.

T.1 **Ponto, K.**, "Entangled Realities" *Master's Thesis*, The University of California, Irvine. 2006.

Exhibitions

E.3 **Protean Guise**, "WikiWander" and "Intertangle" *Ruth Davis Design Gallery. Madison, Wisconsin*, January 22 - February 21, 2016

E.2 **Umweltforshow Exhibition**, "Tangled Reality" *Beall Center for Art and Technology. Irvine, California*, May 19th - May 27th, 2006

E.1 **Eccentric Orbits Exhibition**, "Virtual Bounds" *Calit2 Media Arts Lab. Irvine, California*, May 26th - June 4th, 2005.

Performances

P.2 **Producer / Technical Lead**, "What the Moon Saw" *This performance aimed to create a new form of performance methodology for live theatre using augmented reality technologies.*, Madison, WI. July-August, 2019.

P.1 **Producer / Technical Lead**, "ALICE" *This performance piece showcased the integration of video projection, entertainment automation, motion capture, and virtual reality to create a unique theater performance (https://blogs.discovery.wisc.edu/alice/).*, Madison, WI. May 13-15th and July 1st, 2015.

Professional Activities and Service

Appointments

2015 - Present **Affiliate Faculty**, *Industrial Systems Engineering*, University of Wisconsin - Madison.

2014 - Present **Affiliate Faculty**, *Department of Computer Science*, University of Wisconsin - Madison.

2019 - 2020 **Director**, *Emerging Technologies Hub*, University of Wisconsin - Madison.

2018 - 2020 **Co-Director**, *Illuminating Discovery Hub*, University of Wisconsin - Madison.

2014 - 2018 **Affiliate Faculty**, *Arts Institute*, University of Wisconsin - Madison.

2014 - 2016 **WID Frontier Fellow Mentor**, *Wisconsin Institute for Discovery*, University of Wisconsin - Madison.

2013 - 2016 **Faculty Trainer**, *Computation and Informatics in Biology and Medicine (CIBM)*, University of Wisconsin - Madison.

Professional and Academic Memberships / Affiliations

2023 - Present **Member of the Association for Computing Machinery**.

2014 - Present **McPherson Eye Research Institute**, *University of Wisconsin - Madison*.

2014 - Present **UW Institute for Clinical and Translational Research**, *University of Wisconsin - Madison*.

2013 - Present **Computation and Informatics in Biology and Medicine**, *University of Wisconsin - Madison*.

2009 - Present **Member of Institute of Electrical and Electronics Engineers (IEEE)**.

2017 - 2019 **Member of International Society for Virtual Rehabilitation (ISVR)**.

2017 - 2019 **Environmental Design Research Association (EDRA)**.

2014 - 2018 **Internet of Things Lab**, *University of Wisconsin - Madison*.

Invited Judge

2024 **IDEC Video Competition: Artificial Intelligence + Interior Design**, *Interior Design Educators Council (IDEC)*, Virtual.

2022 **Help Your Community**, *UPL Hackathon*, Madison, WI.

Invited Panelist

2022 **Writing & Publishing Manuscripts**, *One SoHE PDS*, Madison, WI.

2019 **Virtual Dimensions**, *Dimensions of Material Culture*, Madison, WI.

2018 **How is Technology Changing us?**, *Cap Times Idea Fest*, Madison, WI.

What Color is The ____, *Wisconsin Science Festival*, Madison, WI.

Illuminating Discovery, *WID Symposium*, Madison, WI.

2017 **TrustLive on Tech**, *PastForward*, Chicago, Illinois.

Living on Mars, *Mars Invades Madison*, Wisconsin Science Festival, Madison, WI.

Virtual Reality Campus IT Architecture, *Collaboration SIG*, Internet2 Conference, San Francisco, CA.

Improving Forensic Science Policy Panel, *Catalysts for Science Policy*, Madison, WI.

Use of Health IT for Aging Adults, *Agency for Healthcare Research and Quality (AHRQ)*, National Web Conference.

2016 **Collaboration Challenges to setting up VR systems**, *Collaboration SIG*, Internet2 Conference, Chicago, IL.

Lo & Behold: Reveries of the Connected World, *Wisconsin Film Festival*, Film by Werner Herzog, Madison, WI.

2015 **Panel on Design**, *Psych 202*, University of Wisconsin - Madison, Madison, WI.

Invited Reviewer

2024 **International Journal of Human-Computer Studies; Applied Ergonomics; Information Fusion; Displays; Department of Energy; ACM Symposium on Virtual Reality Software and Technology; International Symposium on Visual Computing; International Journal of Medical Informatics; Empathic Computing; IEEE International Conference on Artificial Intelligence and Virtual Reality (AIVR); ACM Symposium on Virtual Reality Software and Technology; Technology in Society; Computers & Education;** .

2023 **Building and Environment; Journal of Virtual Reality; Tourism Analysis: An Interdisciplinary Journal; American Family Funding Initiative; IEEE International Symposium on Mixed and Augmented Reality (ISMAR); International Symposium on Visual Computing; Leap Merit Review HHS; International Journal of Human-Computer Studies; ACM Symposium on Virtual Reality Software and Technology; International Journal of Medical Informatics; National Endowment for the Humanities Office of Digital Humanities** .

2022 **Scientific Reports, Medical Informatics; International Journal of Medical Informatics; International Journal of Information Technology; IEEE International Symposium on Mixed and Augmented Reality (ISMAR); ACM Symposium on Virtual Reality Software and Technology; Behaviour & Information Technology; International Journal of Health Sciences; MobiCom conference; International Journal of Human-Computer Studies; National Science Foundation** .

2021 **Mobile Information Systems; IEEE Transactions on Visualization and Computer Graphics; IEEE International Conference on Intelligent Reality (ICIR); PLOS ONE; IEEE International Symposium on Mixed and Augmented Reality (ISMAR); IEEE International Conference on Artificial Intelligence and Virtual Reality (AIVR); ACM Symposium on Virtual Reality Software and Technology; International Symposium on Visual Computing; Scientific Reports;IEEE Virtual Reality Conference;Frontiers in Virtual Reality; Software X;** .

2020 **PLOS ONE; Automation in Construction; European Research Council; IEEE Transactions on Visualization and Computer Graphics; VRST; Leap Merit Review HHS; American Family Insurance;** .

2019 **IEEE Virtual Reality Conference; VIRE; International Journal of Human-Computer Studies; Applied Ergonomics; International Symposium on Mixed and Augmented Reality**.

2018 **IEEE Consumer Electronics Magazine; ACM MMSys MMVE; International Journal of Human-Computer Studies; ASME Press; NIST; NSF; IEEE Virtual Reality Journal**.

2017 **Applied Ergonomics; UW2020; PLOS ONE; International Journal of Human-Computer Studies; IEEE Virtual Reality Journal; IEEE Virtual Reality Conference**.

2016 **IEEE Transactions on Visualization and Computer Graphics; Computer Methods and Programs in Biomedicine; RO-MAN 2016; IEEE Virtual Reality; CHI; Building and Environment; Applied Ergonomics; 3DUI**.

2015 **IEEE Virtual Reality; Computers and Graphics**.

2014 **3-Minute Futures Flash Fiction Contest; International Journal of Human-Computer Studies; ACM Multimedia Systems Conference (MMSys)**.

2012 **ACM Transactions on Graphics**.

2011 **Computer Graphics Forum**.

2006 **Ubicomp 2006, the Eighth International Conference of Ubiquitous Computing**.

Professional Committees

2018 - Present **Subject Matter Expert**, *National Institute of Standards & Technology's (NIST)*, Public Safety Communication Research (PSCR) Division, Tech to Protect Challenge.

Conference Chairs and Committees

2023 **Session Chair**, *Scene Representation and Reconstruction*, 22nd IEEE International Symposium on Mixed and Augmented Reality (ISMAR), Sydney, Australia. October 16 to 20, 2023. .

Program Committee, *VRST*, ACM Symposium on Virtual Reality Software and Technology, Christchurch, New Zealand, October 9-11 2023. .

Program Committee, *ISVC*, International Symposium on Visual Computing, Lake Tahoe, NV, October 16-18, 2023..

2022 **Program Committee**, *VRST*, ACM Symposium on Virtual Reality Software and Technology, Tsukuba, Japan. November 29 - December 1, 2022. .

Program Committee, *ISVC*, International Symposium on Visual Computing, San Diego, CA, October 3-5, 2022.

2021 **Program Committee**, *VRST*, ACM Symposium on Virtual Reality Software and Technology, Japn/Online December 8-10, 2021.

Technical Program Committee, *AIVR*, IEEE International Conference on Artificial Intelligence and Virtual Reality, Taichung , Taiwan, November 15-17, 2021..

Technical Program Committee, *ICIR*, IEEE International Conference on Intelligent Reality, (Virtual) May 12-13, 2021.

Program Committee, *ISVC*, International Symposium on Visual Computing, (Virtual) October 4-6, 2021.

2020 **Technical Program Committee**, *IEEEVR*, IEEE Conference on Virtual Reality, Atlanta, GA. March 22-26, 2020.

Program Committee, *VRST*, ACM Symposium on Virtual Reality Software and Technology, Ottawa, Canada. November 2-4, 2020.

Review Committee, *DSI*, Data Science Institute AmFam Research Proposal.

International Program Committee, *(ISVC'20)*, International Symposium on Visual Computing , San Diego, CA. October 5-7, 2020.

2019 **Technical Program Committee**, *IEEEVR*, IEEE Conference on Virtual Reality 2019, Osaka, Japan. March 23-27, 2019.

2018 **Web Chair & Conference Program Committee Member**, *IEEEVR*, IEEE Conference on Virtual Reality 2018, Reutlingen, Germany. March 18-22, 2018.

Technical Program Committee, *MMVE Workshop*, ACM MMSys 2018, Amsterdam, The Netherlands. June 12-15, 2018.

2017 **Web Chair & Doctoral Consortium Mentor**, *IEEEVR*, IEEE Conference on Virtual Reality 2016, Los Angles, CA. March 18-22, 2017.

Program Committee, *3DUI*, 3D User Interfaces (3DUI), 2016 IEEE Symposium on, Los Angles, CA. March 18-20, 201.

Advisory Panel, *e3iVR*, Ethics in Investigational & Interventional Uses of Immersive Virtual Reality, Madison, WI. April 26-27, 2017.

2016 **Web Chair**, *IEEEVR*, IEEE Conference on Virtual Reality 2016, Greenville, SC. March 19-23, 2016.

Publicity Chair, *3DUI*, 3D User Interfaces (3DUI), 2016 IEEE Symposium on, Greenville, SC. March 19-20, 2016.

AR Contest Selection Committee, *Internet2*.

2015 **Publicity Chair**, *3DUI*, 3D User Interfaces (3DUI), 2015 IEEE Symposium on, Arles, France. March 23-25, 2015.

2012 **Session Chair**, *Apply yourself (Systems Track: Applications)*, The 18th ACM Symposium on Virtual Reality Software and Technology, Toronto, Canada, December 10-12, 2012.

Current Academic Committees

2020 - Present **Graduate Chair**, *Design Studies Department*, University of Wisconsin - Madison.

2020 - Present **Leadership Committee**, *Design Studies Department*, University of Wisconsin - Madison.

2013 - Present **Graduate Committee**, *Design Studies Department*, University of Wisconsin - Madison.

2012 - Present **Interior Architecture Faculty Committee**, *School of Human Ecology*, University of Wisconsin - Madison.

2012 - Present **Textile Fashion Design Faculty Committee**, *School of Human Ecology*, University of Wisconsin - Madison.

2012 - Present **Wisconsin Institute for Discovery Faculty Committee**, *Wisconsin Institute for Discovery*, University of Wisconsin - Madison.

2012 - Present **School of Human Ecology Faculty and Staff Committee**, *School of Human Ecology*, University of Wisconsin - Madison.

Teaching

Mentored Student Awards

2022 **Honors Summer Sophomore Apprenticeships**, *Kaldan Kopp*,
Faculty mentor for the Summer Sophomore Research Apprenticeship Program,
College of Letters and Sciences.
Total Award: $2,500

2016 **MFA Project Award**, *Jessica Frantal*,
Mentored the proposal for Frantal's MFA exhibition.,
School of Human Ecology.
Total Award: $2,000

2015 **Star Award**, *Hyo-Jeong Kang*,
Mentored the proposal for summertime academic research (STAR) project focused on research of virtual technology in retail environments.,
School of Human Ecology.
Total Award: $3,000

2015 **Most Technically Challenging Hack**, *Jessica Frantal*,
Student used learned skills in technology to win this award.,
Kent State Fashion/Tech Hackaton.

2015 **MFA Qualifier Show Funding Award**, *Jessica Frantal*,
Mentored the proposal for the funding of Frantal's 2nd year MFA Qualifier Show.,
Design Studies Graduate Scholarship.
Total Award: $5,561

2014 **Show Stopper**, *Alix Ambur*,
EL Dress (Originally developed in DS 501: Wearable Computing Fall 2014),
REMIX: Design and Fashion Show.
May 10, 2014. Madison, WI

2014 **Honorable Mention**, *Jessica Frantal*,
Robe a la Foudre (Originally developed in DS 501: Wearable Computing Fall 2014),
Costume-Con 2014.
April 25-28, 2014. Toronto, Canada.

Courses

Fall 2023 **Instructor**, *DS 501: Augmented and Mixed Reality*, University of Wisconsin - Madison.
This course introduces students to the field of augmented and mixed reality. Students will be exposed to the various methods in which augmented and mixed reality content is both created and displayed. Students will be guided through a series of tutorial assignments before undertaking a final project that utilizes these technologies.

Spring 2024 **Instructor**, *DS/CS 579: Virtual Reality*, University of Wisconsin - Madison.
Spring 2023 https://blogs.discovery.wisc.edu/vr2016/
Spring 2022 Developed a curriculum for Virtual Reality for students across campus. This course covers concepts integral to
Spring 2021 virtual reality including how virtual reality hardware and software operate and the applications and challenges
Fall 2020 of virtual reality systems. The course teaches the basics of interactive computer graphics and game engines
Fall 2016 and culminates in the creation based on student's personal interests.

Fall 2022 **Instructor**, *DS/CS/IsyE 518: Wearable Technology*, University of Wisconsin - Madison.
Fall 2021 https://blogs.discovery.wisc.edu/wearable2016/
Spring 2019 Co-Developed and taught a course on wearable technologies for students in Computer Science, Textile and Ap-
Spring 2018 parel Design, Art, Electrical and Computer Engineering. The class taught the basics of electronics, computing and design. Final projects were open to the public.

Fall 2017 **Instructor**, *DS 501: Interior Design V*, University of Wisconsin - Madison.
Developed a course for Interior Architecture students teaching the concepts of digital images, ray tracing, interactive computer graphics and virtual reality.

Spring 2017 **Instructor**, *DS 501: Wearable Technology*, University of Wisconsin - Madison.
https://blogs.discovery.wisc.edu/wearable2016/
Co-Developed and taught a course on wearable technologies for students in Computer Science, Textile and Apparel Design, Art, Electrical and Computer Engineering. The class taught the basics of electronics, computing and design. Final projects were open to the public.

Spring 2016 **Instructor**, *DS 501: Wearable Technology*, University of Wisconsin - Madison.
https://blogs.discovery.wisc.edu/wearable2016/
Co-Developed and taught a course on wearable technologies for students in Computer Science, Textile and Apparel Design, Art, Electrical and Computer Engineering. The class taught the basics of electronics, computing and design. Final projects were open to the public.

Fall 2015 **Instructor**, *DS 501: Design in Virtual Reality*, University of Wisconsin - Madison.
https://blogs.discovery.wisc.edu/vr2015/
Developed a curriculum for Virtual Reality for both students in Interior Architecture, Education Math, and Computer Science. The class not only focused VR technologies, but also the theories behind perception and presence and discussed the ethical issues involved in VR technologies.

Fall 2014 **Instructor**, *DS 501: Wearable Technology*, University of Wisconsin - Madison.
https://blogs.discovery.wisc.edu/wearable14/
Developed a curriculum for wearable technologies for students in Computer Science, Textile and Apparel Design, Art, Electrical and Computer Engineering. The class taught the basics of electronics, computing and design. Final projects were open to the public.

Spring 2014 **Instructor**, *DS 501: Design in Virtual Reality*, University of Wisconsin - Madison.
https://blogs.discovery.wisc.edu/designinvr-14/
Developed a curriculum for Virtual Reality for both students in Textile and Apparel Design, Interior Design, Education and Computer Science. The class not only focused VR technologies, but also the theories behind perception and presence and discussed the ethical issues involved in VR technologies.

Fall 2013 **Instructor**, *DS 501: Wearable Computing*, University of Wisconsin - Madison.
https://blogs.discovery.wisc.edu/wearablecomputing-13/
Developed a curriculum for wearable technologies for students in Computer Science, Textile and Apparel Design, Industry Engineering and BioMedical Engineering. The class taught the basics of electronics, computing and design. Final projects were open to the public. The class was featured on Wisconsin News (http://www.news.wisc.edu/22403) and Wisconsin Public Radio (http://www.wpr.org/uw-students-sew-solder-and-sync-build-wearable-computing).

Spring 2013 **Instructor**, *DS 501: Design in Virtual Reality*, University of Wisconsin - Madison.
https://blogs.discovery.wisc.edu/ds501/
Developed a curriculum for Virtual Reality for both Design Studies and Computer Science students. The class not only focused VR technologies, but also the theories behind perception and presence and discussed the ethical issues involved in VR technologies. Student's final projects were open to the public and were showcased at the Wisconsin Institute for Discovery.

Spring 2011 **Instructor**, *CS 638: Projects in Virtual Reality*, University of Wisconsin - Madison.
http://graphics.cs.wisc.edu/WP/virtualreality11/
Developed a curriculum for Virtual Reality, which was the first time the topic had been taught at UW-Madison. The class not only focused VR technologies, but also the theories behind perception and presence. Student's final projects were open to the public and were showcased at the Wisconsin Institute for Discovery.

Independent Studies

2013-Present **Instructor**, *DS 299/699/990/999 and COMP SCI 699/790/799/899/999*, University of Wisconsin - Madison.
https://blogs.discovery.wisc.edu/projects/
I have worked with students from Design Studies, Art, Zoology, Electrical and Computer Engineering and Computer science. Projects have ranged from scientific experimentation, to artist renderings, new methods of interaction and new means of data collection and visualization.

Primary Advised Terminal Degree Students

December 2024 **Master's of Science**, *Towards the Recreation of More Realistic 3D Virtual Museum Tours*, Jingxin Du, Department of Computer Sciences.
University of Wisconsin - Madison

May 2024 **Master's of Science**, *A Study On Empathy Communication Using Virtual Reality*, Pranav Rao, Department of Computer Sciences.
University of Wisconsin - Madison

August 2021 **Doctor of Philosophy**, *Correcting Distance Misperceptions in Augmented and Virtual Reality*, Alex Peer, Department of Computer Sciences.
University of Wisconsin - Madison

August 2019 **Doctor of Philosophy**, *Designing Virtual Reality Marketplaces*, Hyojeong Kang, Department of Design Studies.
University of Wisconsin - Madison

August 2016 **Master's of Fine Arts**, *Systema Technaturæ*, Jessica Frantal, Department of Design Studies.
University of Wisconsin - Madison

Degree Committees

May 2023 **Master of Fine Arts**, *Green School Design Principles and Elements in Taiwan*, HongYi Shih, Department of Design Studies.
University of Wisconsin - Madison

June 2022 **Doctor of Philosophy**, *Authoring Social Interactions between Humans and Robots*, David Porfirio, Department of Computer Sciences.
University of Wisconsin - Madison

December 2021 **Master of Science**, *Effects Of Habituation On Spatiotemporal Gait Measures In Younger Adults*, Alejandra Padilla, Department of Kinesiology.
University of Wisconsin - Madison

December 2021 **Master of Science**, *Understanding Locomotion Preferences to Tailor Virtual Reality for Individual Learners*, Tam Nguyen, Department of Psychology.
University of Wisconsin - Madison

August 2021 **Doctor of Philosophy**, *Education on the Shaky Ground of Humanism: Space, Subject, and Digitalization*, Liang Wang, Department of Curriculum and Instruction.
University of Wisconsin - Madison

December 2020 **Doctor of Philosophy**, *Demonstrating the Efficacy and Determining the Effective Dose of Optokinetic Stimulation as an Intervention for Moderate Visual Vertigo*, Colin R. Grove, Institute for Clinical and Translational Research.
University of Wisconsin - Madison

May 2020 **Doctor of Philosophy**, *Reconciling Pixels and Percept Improving Spatial Visual Fidelity with a Spherical Fish Tank VR Display*, Qian Zhou, Electrical and Computer Engineering.
University of British Columbia

May 2018 **Master of Fine Arts**, *Immersive Technology: Using Augmented Reality Applications in Theatre for Young Audiences*, Caitlin M. Magness, Department of Theatre and Drama.
University of Wisconsin - Madison

September 2016 **Doctor of Philosophy**, *Effective Directed Gaze For Character Animation*, Tomislav Pejsa, Department of Computer Sciences.
University of Wisconsin - Madison

July 2016 **Doctor of Philosophy**, *Designing Socially Contingent Gaze Behaviors For Embodied Agents*, Sean Andrist, Department of Computer Sciences.
University of Wisconsin - Madison

June 2016 **Doctor of Philosophy**, *Engaging Emerging Adults in the Design Process of Technology Driven Health Interventions*, Daniel Nicolalde, Department of Industrial and Systems Engineering.
University of Wisconsin - Madison

August 2015 **Master's of Science**, *Learning to program using online forums: A comparison of links posted on Reddit and Stack Overflow*, Caroline Hardin, Department of Curriculum and Instruction.
University of Wisconsin - Madison

August 2015 **Doctor of Philosophy**, *Design and assessment of a virtual reality rehabilitation system for individuals with chronic pain*, Karen Bo-Ru Chen, Department of Biomedical Engineering.
University of Wisconsin - Madison

August 2015 **Doctor of Philosophy**, *Improving Visual Statistics*, Michael A. Correll, Department of Computer Sciences.
University of Wisconsin - Madison

August 2015 **Doctor of Philosophy**, *Human Interaction With Assistive Free-Flyers*, Daniel Szafir, Department of Computer Sciences.
University of Wisconsin - Madison

July 2015 **Doctor of Philosophy**, *Perceptually Informed Scalable Sequence Comparison*, Danielle Albers/Szafir, Department of Computer Sciences.
University of Wisconsin - Madison

May 2013 **Master's of Fine Arts**, *Bikeways as an Expression of Urban Culture – Enriching Cycling Experiences*, Chengcheng Mei, Department of Design Studies.
University of Wisconsin - Madison