Jin Ryong Kim

Assistant Professor · Computer Science

The University of Texas at Dallas, 800 W. Campbell Rd., Richardson, TX 75080

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Education

Purdue University — *West Lafayette, IN, USA*
PhD Electrical and Computer Engineering — *2011 - 2014*
- Advisor: Dr. Hong Z. Tan

Purdue University — *West Lafayette, IN, USA*
MS Computer Science — *2008 - 2010*

Hanyang University — *Seoul, Korea*
MS Electrical and Computer Engineering — *2002 - 2004*
- Advisor: Dr. Youjip Won

Hanyang University — *Seoul, Korea*
BS Electrical and Computer Engineering — *1998 - 2001*

Professional Experience

The University of Texas at Dallas — *Richardson, TX, USA*
Assistant Professor — *2020 - present*
- Department of Computer Science
- Department of Electrical and Computer Engineering (courtesy)
- Director of Multimodal Interaction Lab

Alibaba Group — *Sunnyvale, CA, USA*
Staff Researcher — *2018 - 2020*
- Natural Human-Computer Interaction Lab

ETRI — *Daejeon, Korea*
Senior Researcher — *2004 - 2018*
- Next Generation Visual Computing Lab

Purdue University — *West Lafayette, IN, USA*
Research Assistant — *2011 - 2014*
- Haptic Interface Research Lab

Microsoft Research Asia — *Beijing, P.R.China*
Research Intern — *2011 - 2012*
- Human-Computer Interaction Lab

Samsung Advanced Institute of Technology — *Yongin, Korea*
Research Intern — *2004*
- i-Networking Lab

NHK Science and Tehnology Research Laboratories — *Tokyo, Japan*
Research Intern — *2003*
- Advanced Audio and Visual Coding Lab

Samsung Electronics — *Seoul, Korea*
Software Intern — *2002-2003*
- Software Membership Lab

Publications

Book Chapters

B1. **Jin Ryong Kim**. Multimodal Interaction with Mid-Air Haptics, *Ultrasound Mid-Air Haptics for Touchless Interfaces*, Human-Computer Interaction Series, pp.185-205, Springer, 2022.

Journal Publications

Impact factors by Journal Citation Reports 2022

J8. Tae-Heon Yang, **Jin Ryong Kim**, Hanbit Jin, Hyunjae Gil, Jeong-Hoi Koo, and Hye Jin Kim, Recent Advances and Opportunities of Active Materials for Haptic Technologies in Virtual and Augmented Reality, *Advanced Functional Materials*, 2008831, Wiley, 2021 (first co-author, IF=19.92).

J7. Yong Hae Heo, Sangkyu Byeon, Tae-Hoon Kim, In-Ho Yun, **Jin Ryong Kim**, and Sang-Youn Kim, Investigation of a Haptic Actuator Made with Magneto-Rheological Fluids for Haptic Shoes Applications, *Actuators*, Vol. 10, No. 5, MDPI, 2021 (IF=2.76).

J6. Tae-Heon Yang, Hyungki Son, Sangkyu Beyon, Hyunjae Gil, Inwook Hwang, Gwanghyun Jo, Seungmoon Choi, Sang-Youn Kim, and **Jin Ryong Kim**, Magnetorheological Fluid Haptic Shoes for Walking in VR, *IEEE Transactions on Haptics*, Volume 14, Issue 1, pg. 83-94, IEEE, 2020 (IF=2.487).

J5. Reza Haghighi Osgouei, **Jin Ryong Kim**, and Seungmoon Choi, Data-driven Texture Modeling and Rendering on Electrovibration Display, *IEEE Transactions on Haptics*, DOI: 10.1109/TOH.2019.2932990, Aug. 2019, IEEE, 2019 (IF=2.487).

J4. Hyungki Son, Seunghyup Shin, Seungho Choi, Sang-Youn Kim, and **Jin Ryong Kim**, Interacting Automultiscopic 3D with Haptic Paint Brush in Immersive Room, *IEEE Access*, Vol. 7, Iss. 1, Access-2018-19117, pg. 1-11, IEEE, 2018 (IF=3.367).

J3. Seokhee Jeon, Hongchae Lee, Jiyoung Jung, and **Jin Ryong Kim**, User Adaptive Key-Click Vibration on Virtual Keyboard, *Mobile Information Systems*, Vol. 2018, Article ID 6126140, 12 pages, 2018 (IF=1.802).

J2. Reza Haghighi Osgouei, **Jin Ryong Kim**, and Seungmoon Choi, Improving 3D Shape Recognition for Electrostatic Friction Display, *IEEE Transactions on Haptics*, Volume 10, Issue 4, pp. 533-544, October-December 2017 (IF=2.487).

J1. **Jin Ryong Kim**, Seunghyup Shin, Seungho Choi, and Yeonwoo Yoo, Multimodal Interaction on Automultiscopic Content with Mobile Surface Haptics, *ETRI Journal*, Volume 38, Number 6, pp. 1085-1094, December 2016 (IF=1.347).

Conference Publications

C29. Ayush Bhardwaj, Sungjoo Kang, and **Jin Ryong Kim**, Data Abstraction for Visual and Haptic Representations in Flow Visualization, *Proceedings of the ACM Symposium on Virtual Reality Software and Technology (VRST 2022) Poster*, November 29-December 1, 2022 (accepted for publication).

C28. Henry Kim, Ayush Bhardwaj, Brandon Coffey, Dongbeom Ko, Sungjoo Kang, and **Jin Ryong Kim**, MetaTwin: Synchronizing Physical and Virtual Spaces for Seamless World, *Proceedings of the ACM Symposium on Virtual Reality Software and Technology (VRST 2022) Poster*, November 29-December 1, 2022 (accepted for publication).

C27. Yatharth Singhal, Richard Noeske, Ayush Bhardwaj, and **Jin Ryong Kim**, Improving Finger Stroke Recognition Rate for Eyes-Free Mid-Air Typing in VR, *Proceedings of the ACM CHI Conference on Human Factors in Computing Systems (CHI 2022)*, April 30-May 6, 2022.

C26. Ayush Bhardwaj, Junghoon Chae, Richard Noeske, and **Jin Ryong Kim**, TangibleData: Interactive Data Visualization with Mid-Air Haptics, *Proceedings of the ACM Symposium on Virtual Reality Software and Technology (VRST 2021)*, December 8-10, 2021 (Full paper acceptance rate 26.2%).

C25. Yatharth Singhal, Haokun Wang, Hyunjae Gil, and **Jin Ryong Kim**, Mid-Air Thermo-Tactile Feedback using Ultrasound Haptic Display, *Proceedings of the ACM Symposium on Virtual Reality Software and Technology (VRST 2021)*, December 8-10, 2021 (Full paper acceptance rate 26.2%).

C24. Tae-Heon Yang, Hyungki Son, Sang Gyu Byeon, Hyunjae Gil, Inwook Hwang, Gwanghyun Jo, Seungmoon Choi, Sang-Youn Kim, and **Jin Ryong Kim**, Magnetorheological Fluid Haptic Shoes for Walking in VR, *IEEE Transactions on Haptics Poster Session in the IEEE World Haptics Conference (WHC 2021)*, 2021.

C23. Hyunjae Gil, Yongwhan Shin, Hyungki Son, Inwook Hwang, Ian Oakley, and **Jin Ryong Kim**, Characterizing In-Air Eyes-Free Typing Movements in VR, *Proceedings of the ACM Symposium on Virtual Reality Software and Technology (VRST 2020)*, November 1-4, 2020 (Full paper acceptance rate 26.5%).

C22. Reza Haghighi Osgouei, **Jin Ryong Kim**, and Seungmoon Choi, Data-Driven Texture Modeling and Rendering on Electrovibration Display, *IEEE Transactions on Haptics Poster Session in the IEEE Haptics Symposium (HAPTICS 2020)*, 2020.

C21. Hyungki Son, Inwook Hwang, Tae-Heon Yang, Seungmoon Choi, Sang-Youn Kim, and **Jin Ryong Kim**, RealWalk: Haptic Shoes Using Actuated MR Fluid for Walking in VR, *Proceedings of the IEEE World Haptics Conference 2019 (WHC 2019)*, pp. 241-246, 2019 (Oral presentation: Acceptance rate 5.7%; **Candidate for the Best Paper Award**).

C20. Hyunjae Gil, Hyungki Son, **Jin Ryong Kim**, and Ian Oakley, Whiskers: Exploring the Use of Ultrasonic Haptic Cues on the Face, *Proceedings of ACM Conference on Human Factors in Computing Systems 2018 (CHI 2018)*, Paper No. 658, Montreal, QC, Canada, April 21-26, 2018.

C19. Reza Haghighi Osgouei, Sunghwan Shin, **Jin Ryong Kim**, and Seungmoon Choi, An Inverse Neural Network Model for Data-driven Texture Rendering on Electrovibration Display, *Proceedings of IEEE Haptics Symposium 2018 (HAPTICS 2018)*, pp. 270-277, 2018 (Single-track featured talk; Acceptance rate 13%).

C18. **Jin Ryong Kim** and Seunghyup Shin, Touch3D: Touchscreen Interaction on Multiscopic 3D with Electrovibration Haptics, *Proceedings of ACM SIGGRAPH 2017 (SIGGRAPH 2017)* Poster, Los Angeles, CA, 30 July - 3 August, 2017.

C17. **Jin Ryong Kim**, Reza Haghighi Osgouei, and Seungmoon Choi, Effects of Visual and Haptic Latency on Touchscreen Interaction: A Case Study Using Painting Task, *Proceedings of IEEE World Haptics Conference 2017 (WHC 2017)*, pp. 159-164, 2017.

C16. Inwook Hwang, Hyungki Son, and **Jin Ryong Kim**, AirPiano: Enhancing Music Playing Experience in Virtual Reality with Mid-Air Haptic Feedback, *Proceedings of IEEE World Haptics Conference 2017 (WHC 2017)*, pp. 213-218, 2017.

C15. Reza Haghighi Osgouei, **Jin Ryong Kim**, and Seungmoon Choi, Identification of Primitive Geometrical Shapes Rendered Using Electrostatic Friction Display, *Proceedings of IEEE Haptics Symposium 2016 (HAPTICS 2016)*, pp. 198-204, 2016.

C14. **Jin Ryong Kim** and Hong Z. Tan, Effect of Information Content in Sensory Feedback on Typing Performance using a Flat Keyboard, *Proceedings of IEEE World Haptics Conference 2015 (WHC 2015)*, pp. 228-234, 2015.

C13. **Jin Ryong Kim** and Hong Z. Tan, Haptic Feedback Intensity Affects Touch Typing Performance on a Flat Keyboard, *Proceedings of EuroHaptics 2014*, pp. 369-375, 2014.

C12. **Jin Ryong Kim** and Hong Z. Tan, A Study of Touch Typing Performance with Keyclick Feedback, *Proceedings of IEEE Haptics Symposium 2014 (HAPTICS 2014)*, pp. 227-233, 2014 (Oral presentation acceptance rate: 7.6%).

C11. **Jin Ryong Kim**, Xiaowei Dai, Xiang Cao, Carl Picciotto, Desney Tan, and Hong Z. Tan, A Masking Study of Key-Click Feedback Signals on Two Fingers using Simple Clicks, *Proceedings of EuroHaptics 2012*, pp. 247-257, 2012 (Acceptance rate 21%).

C10. Ruben Torres, Alessandro Finamore, **Jin Ryong Kim**, Marco Mellia, Maurizio M. Munafo, and Sanjay Rao, Dissecting Video Server Selection Strategies in the YouTube CDN, *Proceedings of the 31st International Conference on Distributed Computing Systems 2011 (ICDCS 2011)*, pp. 248-257, 2011 (Acceptance rate 15.4%).

C9. **Jin Ryong Kim**, Il Kyu Park, and Kwang Hyun Shim, The Effects of Network Loads and Latency in Multiplayer Online Games, *Proceedings of the 6th International Conference on Entertainment Computing (ICEC 2007)*, pp. 427-432, 2007.

C8. **Jin Ryong Kim**, Youn-hee Han, and Kwang Hyun Shim, Seamless Multimedia Transmission During Fast Handover in Mobile IPv6 Environment, *Proceedings of IEEE Conference on Multimedia and Expo (ICME 2006)*, pp. 621-624, 2006.

C7. Bum Hyun Lim, **Jin Ryong Kim**, and Kwang Hyun Shim, Hierarchical Load Testing Architecture Using Large Scale Virtual Clients, *Proceedings of IEEE Conference on Multimedia and Expo (ICME 2006)*, pp. 581-584, 2006.

C6. Jung Youl Lim, **Jin Ryong Kim**, and Kwang Hyun Shim, A Dynamic Load Balancing Model For Networked Virtual Environment Systems Using an Efficient Boundary Partition Management, *Proceedings of IEEE International Conference on Advanced Communication Technology 2006*, pp. 727-730, 2006.

C5. Bum Hyun Lim, **Jin Ryong Kim**, and Kwang Hyun Shim, A Load Testing Architecture for Networked Virtual Environment, *Proceedings of the IEEE International Conference on Advanced Communication Technology 2006*, IEEE, 2006.

C4. Jaeyong Chung, **Jin Ryong Kim**, and Kwang Hyun Shim, Vision Based Motion Tracking System for Interactive Entertainment Applications, *IEEE Tencon 2005*, 2005.

C3. **Jin Ryong Kim**, Youjip Won, and Yuichi Iwadate, Adaptive QoS Framework for Multiview 3D Streaming, *Proceedings of the 4th International Conference on Computational Science (ICCS 2004)*, pp. 519-522, 2004.

C2. **Jin Ryong Kim**, Yuichi Iwadate, and Youjip Won, Network Aware QoS Management for Immersive Environment, *Proceedings of the International Conference on Artificial Reality and Telexistence (ICAT 2003)*, pp.222-229, 2003.

C1. **Jin Ryong Kim**, Youjip Won, and Beomeun Kim, Hierarchical QoS Architecture for Networked Virtual Dancing Environment, *Proceedings of the International Conference on Artificial Reality and Telexistence (ICAT 2003)*, pp.46-53, 2003.

Conference Demos

D5. Seongwon Cho, Reza Haghighi Osgouei, **Jin Ryong Kim**, and Seungmoon Choi, Data-driven Texture Modeling and Rendering on Electrovibation Display, *ACM International Conference on Interactive Surfaces and Spaces (ISS 2019 Demo*), Daejeon, Korea, November 10-13, 2019.

D4. **Jin Ryong Kim**, Stephanie Chan, Xiangchao Huang, Kenneth Ng, Limin Paul Fu, and Chen Zhao, *Extended Abstracts of the 2019 ACM Conference on Human Factors in Computing Systems 2019 (CHI 2019 Demo)*, Glasgow, UK, May 4-9, 2019.

D3. Hyungki Son, Hyunjae Gil, Sangkyu Byeon, Sang-Youn Kim, and **Jin Ryong Kim**, RealWalk: Feeling Ground Surfaces While Walking in Virtual Reality, *Extended Abstracts of the ACM Conference on Human Factors in Computing Systems 2018 (CHI 2018 Demo)*, D400, Montreal, QC, Canada, April 21-26, 2018.

D2. Reza Haghighi Osgouei, Sunghwan Shin, Seongwon Cho, **Jin Ryong Kim**, and Seungmoon Choi, An Inverse Neural Network Model for Data-Driven Texture Rendering on Electrovibration Display, *IEEE Haptics Symposium 2018 Demo*, 2018.

D1. **Jin Ryong Kim** and Seunghyup Shin, Touchscreen Interaction on Automultiscopic Display with Electrostatic Vibration, *AsiaHaptics 2016 Demo*, Kashiwanoha, Japan, Nov. 29 - Dec. 1, 2016.

Conference Workshops

W5. Orestis Georgiou, Hannah Limerick, Loic Corenthy, Mykola Maksymenko, Sam Fish, Mark Perry, Jorg Muller, Myroslav Bachynskyi and **Jin Ryong Kim**, Mid-Air Haptic Interfaces for Interactive Digital Signage and Kiosks, *Extended Abstracts of the ACM Conference on Human Factors in Computing Systems 2019 (CHI 2019 Workshop)*, Glasgow, UK, May 4-9, 2019.

W4. Marcello Giordano, Orestis Georgiou, Brygida Dzidek, Loic Corenthy, **Jin Ryong Kim**, Sriram Subramanian, and Stephen A. Brewster, Mid-Air Haptics for Control Interfaces, *Extended Abstracts of the 2018 CHI Conference on Human Factors in Computing Systems (CHI 2018 Workshop)*, W15, Montreal, QC, Canada, April 21-26, 2018.

W3. Lan Zhao, Carol Song, Jaewoo Lee, **Jin Ryong Kim**, Wei Feng, Venkatesh Merwade, and Nelson Villoria, Bring Integrated GIS Data and Modeling Capabilities into the HUBzero Platform, *Proceedings of the ACM SIGSPATIAL Second International Workshop on High Performance and Distributed Geographic Information Systems (HPDGIS 2011)*, Chicago, IL, Nov. 3-5, 2011.

W2. Venkatesh Merwade, Ben Ruddell, Carol Song, and Lan Zhao, **Jin Ryong Kim**, Amjad Assi, Publishing and Sharing of Hydrologic Models through Water HUB, *Abstract IN33B-1467 presented at 2011 Fall Meeting, AGU*, San Francisco, CA, Dec. 5-9, 2011.

W1. Peter Kristof, Bedrich Benes, **Jin Ryong Kim**, Lan Zhao, and Carol Song, Near Real-time 3D Visualization of Rainfall Data, *TeraGrid 2009*, Arlington, VA, Jun. 22-25, 2009.

US Patents

P7. **Jin Ryong Kim**, Hyunjae Gil, Stephanie Chan, Chen Zhao, "Surface Imaging Using High Incident Angle of Light Rays," *US Patent*, Patent Number: 20210398273, Pub. Date: Dec. 23, 2022.

P6. Paul Fu, Xiaohu Dong, Rui Yang, Chen Zhao, **Jin Ryong Kim**, Xiangchao Huang, Stephanie Chen, Yu Qin, Puhe Liang, Shenli Yuan, "Multimodal 3D Object Interaction System," *US Patent*, Patent Number: 11048375, Pub. Date: June 29, 2021.

P5. **Jin Ryong Kim**, Chen Zhao, Limin Paul Fu, Jonas C. Kong, Stephanie Chan, Michael Lee, Kenneth Ng, "Temperature Adjustment Feedback System in Response to User Input," *US Patent*, Patent Number: US2020/0393156 A1, Pub. Date: Dec. 17, 2020.

P4. Beom Ryeol Lee, **Jin Ryong Kim**, Jung Chul Park, Il Kwon Jeong, Gi Su Heo, "Bilateral Distance Automatic Control Display Apparatus Providing a Multi-Focus Video and Method Therefor," *US Patent*, Patent Number: 20170180717, Pub. Date: June 22, 2017.

P3. **Jin Ryong Kim**, Ju Young Kim, Chang Joon Park, and Kwang Ho Yang, "System and Method for Re-generating Packet Load for Load Test," *US Patent*, Patent Number: US8667119 B2, Pub. Date: Mar. 4, 2014.

P2. **Jin Ryong Kim**, Ju Young Kim, Chang Joon Park, and Kwang Ho Yang, "Method and System for Simulating Network Address Translation", *US Patent Pending*, Patent Application Number: US2009/0154464 A1, Pub. Date: Jun. 18, 2009.

P1. Jung Youl Lim, Jaeyoung Chung, Bum Hyun Lim, **Jin Ryong Kim**, Kwang Hyun Shim, Beom Ryeol Lee, and Kwang Ho Yang, "Intelligent Distributed Server System and Method for Operating the Same," *US Patent Pending*, Patent Application Number: US2007/0117631 A1, Pub. Date: May 24, 2007.

Korean Patents

K14. **Jin Ryong Kim**, "System and Method for Providing Haptic Feedback for Running Shoes in HMD-based Virtual Reality Environment," *Korean Patent*, Patent Application Number: 2016-0069522, Jun. 3, 2016.

K13. **Jin Ryong Kim** and Seunghyup Shin, "Combining Autostereoscopic Display with Electrostatic Haptic Display", *Korean Patent*, Patent Application Number: 2016-0097474, Jul. 29, 2016.

K12. **Jin Ryong Kim**, Hyuk Jeong, Beom Ryeol Lee, and Il Kwon Jeong, "Vibration Signal Output Apparatus According to the Continuous Input for Use in Smart Phones Keyboard Input and Method Therefor," *Korean Patent*, Patent Application Number: 2016-0101915, Aug. 10, 2016.

K11. **Jin Ryong Kim**, Hyuk Jeong, Beom Ryeol Lee, and Il Kwon Jeong, "Haptic Signal Output Apparatus according to the Continuous Input in the Korean Virtual Keyboard for Smartphone and Method," *Korean Patent*, Patent Application Number: 2015-0183218, Dec. 21, 2015.

K10. Hye-Jin Kim, **Jin Ryong Kim**, and Il Kwon Jeong, "Apparatus for Performing Interaction with Object using Feedback and Method using the Same," *Korean Patent (Pending)*, Patent Application Number: 2015-0031316, Mar. 6, 2015.

K9. **Jin Ryong Kim**, Hye-Jin Kim, and Il Kwon Jeong, "Interaction Controller, System and Method for Providing Haptic Feedback using the Interaction Controller," *Korean Patent (Pending)*, Patent Application Number: 2015-0110132, Aug. 4, 2015.

K8. **Jin Ryong Kim**, Ju Young Kim, Chang Joon Park, and Kwang Ho Yang, "Load Regeneration Method using Collected Packets for Server Load Test," *Korean Patent Grant*, Patent Number: 0962532, Jun. 3, 2010.

K7. Kihyuk Nam, **Jin Ryong Kim**, Wonyoung Kim, Whan Choi, Myungjoon Kim, and Kwang Hyun Shim, "Method and System for Developing, Executing, Distributing, and Billing Streamed Game Software on Mobile Devices," *Korean Patent Grant*, Patent Number: 0826871, Apr. 25, 2008.

K6. Bum Hyun Lim, **Jin Ryong Kim**, Kwang Hyun Shim, Jung Youl Lim, Jaeyong Cheong, Kwang Ho Yang, Beom Ryeol Lee, "A Simple Load Test Solution to Ensure the Stability of the Server Application," *Korean Patent Grant*, Patent Number: 0811468, Mar. 3, 2008.

K5. **Jin Ryong Kim**, Kihyuk Nam, Bum Hyun Lim, Kwang Hyun Shim, Kwang Ho Yang, and Whan Choi, "A Method for Streaming 3D Data in Wired and Wireless Network Environment," *Korean Patent Grant*, Patent Number: 0692525, Mar. 2, 2007.

K4. Jung Youl Lim, Jaeyong Chung, **Jin Ryong Kim**, Kwang Hyun Shim, Bum Hyun Lim, Kwang Ho Yang, and Beom Ryeol Lee, "Intelligent Distributed Server System Development for Game World and User Service on Multiplayer Online Games," *Korean Patent Grant*, Patent Number: 0742357, Jul. 18, 2007.

K3. Jaeyong Chung, **Jin Ryong Kim**, Jung Youl Lim, Kwang Hyun Shim, Kwang Ho Yang, Beom Ryeol Lee, and Bum Hyun Lim, "A Game State Synchronization System for a Wired and Wireless Multiplatform Online Game under Unreliable Wireless Network Environment," *Korean Patent Grant*, Patent Number: 0722427, May 21, 2007.

K2. **Jin Ryong Kim**, Il Kyu Park, Jaeyong Chung, Hyunbin Kim, Taejoon Park, Kwang Hyun Shim, and Kwang Ho Yang, "An Efficient Packet Transmission Method in Client-Server-based Network Virtual Environment," *Korean Patent Grant*, Patent Number: 0617326, Aug. 22, 2006.

K1. Il Kyu Park, **Jin Ryong Kim**, Jaeyong Chung, Taejoon Park, Kwang Hyun Shim, and Kwang Ho Yang, "A Real-time Patching System for Executable Codes on a Read-only Medium for Video Game Consoles without Auxiliary Storage Device," *Korean Patent Grant*, Patent Number: 0670797, Jan. 11, 2007.

Awards and Honors

IEEE Robotics and Automation Society

Distinguished Service Award *2022*

- Outstanding Associate Editor of IEEE RA-L Journal

Korea Haptics Community

Young Researcher Award *2019*

ETRI

ETRI Researcher of the Year *2006*

Hanyang University
Hanyang Technology and Science Fellowship *2002-2004*

Samsung Electronics
Third Prize at Samsung Software Competition *2003*

Editorial Services

IEEE Robotics and Automation Letters
Associate Editor *2018-present*
- IEEE RA-L area: Human-Centered Robotics and Automation

IEEE Transactions on Haptics
Guest Editor *2022*
- Transactions on Haptics to Haptics Symposium 2022 track

Frontiers in Virtual Reality
Lead Guest Editor *2021-present*
- Special Issue on New Materials and Technologies for Haptics that Enhance VR and AR

IEEE Haptics Symposium 2022
Program Committee Member *2021-2022*

IEEE Transactions on Haptics
Guest Editor *2020*
- Transactions on Haptics to World Haptics Conference 2021 track

MDPI Sensors
Guest Editor *2020-2022*
- Special Issue on Intelligent Internet of Thing, Sensor, and AR/VR Technology for Smart Cities

IEEE Transactions on Haptics
Guest Editor *2019-2020*
- Transactions on Haptics to Haptics Symposium 2020 track

MDPI Sensors
Guest Editor *2019-2020*
- Special Issue on New Technologies and Applications for Smart Interactive Cyber-Physical Systems

ACM CHI 2019
Associate Chair *2018-2019*
- Engineering Interactive Systems and Technologies Subcommittee

Conferences and Workshops Organization

IEEE World Haptics Conference 2019 *Tokyo, Japan*
Student Competition Co-Chair *2019*

ACM CHI Workshop on Mid-Air Haptic Interfaces for Interactive Digital Signage and Kiosks *Glasgow, UK*
Workshop Co-Organizer *2019*

AsiaHaptics 2018 *Incheon, Korea*
Student Competition Co-Chair *2018*

ACM CHI 2018 *Montréal, Canada*
Session Chair *2018*

ACM CHI Workshop on Mid-Air Haptics for Control Interfaces *Montréal, Canada*
Workshop Co-Organizer *2018*

The 10th Annual Workshop of Korea Haptics Community *Yongin, Korea*
General Co-Chair *2017*

Hyundai Motors Haptics Idea Competition *Yongin, Korea*
Award Chair *2017*

HCI Korea 2017 Workshop on Novel Haptic Interaction *Jeongsun, Korea*
Organizer *2017*

Journal and Conference Papers Reviews

- IEEE Transactions on Haptics
- IEEE Robotics and Automation Letters
- IEEE World Haptics Conference
- IEEE Haptics Symposium
- IEEE VR
- ACM IMWUT
- ACM CHI
- ACM UIST
- ACM VRST
- ACM TEI
- EuroHaptics
- Science
- Interaction with Computers

Grants

2022-2025	**Testing EdgeCPS Metaverse Experiment**, ETRI (Role: PI)	*$ 280,000 (approximate)*
2022-2027	**Perception Study on Wavelength/Phase Control and Test Spatial Pattern Formation for Ultrasound Haptic Display**, ETRI (Role: PI)	*$ 420,000 (approximate)*

Media Coverage

- *Going Beyond Goggles: Dallas Senior Living Community Explores VR with Dementia Patient,* **The Dallas Morning News**, Dallas, USA, August 5, 2022
- *Testronic Labs Launches MMOG Performance Test Solution,* **Business Wire**, San Francisco, USA, March 28, 2008
- *MMOG performance testing tool to be spread throughout North America, Europe and Japan by Testronic,* **Games Industry**, Brighton, UK, March 28, 2008
- *QA company to sell Korean-developed MMO load testing tool,* **Develop Magazine**, Robertsbridge, UK, March 28, 2008

Invited Talks

- *Haptic Interaction in Immersive Environments,* Invited talk: School of Chemical Engineering, Sungkyunkwan University, Suwon, Korea, October 2022 (online)
- *Haptic Interaction in Immersive Environments,* Invited talk: School of Electronic Engineering and Computer Science, Queen Mary University of London, London, United Kingdom, May 2022
- *Multimodal Interaction with Mid-Air Haptics,* Invited talk: Ultraleap, Bristol, United Kingdom, May 2022
- *Mid-Air Thermo-Tactile Feedback using Ultrasound Haptic Display,* Invited talk: Korea University of Technology and Education, Cheonan, Korea, November 2021 (online).
- *Haptic Interaction in Immersive Environment,* Invited talk: University of Science and Technology, Daejeon, Korea, October 2021 (online)
- *Haptic Interaction in Immersive Environments,* Invited talk: ETRI Metaverse Workshop 2021, Digital Content Research Division, ETRI, Daejeon, Korea, August, 2021 (online)
- *Haptic Interaction in Immersive Environment,* Invited talk: Dongguk University, Seoul, Korea, July, 2021
- *Mid-Air Thermo-Tactile Feedback using Ultrasound Haptic display,* Invited talk: Sungkyunkwan University, Suwon, Korea, June, 2021
- *Haptic Interaction in Immersive Environment,* Invited talk: Pohang University of Science and Technology, Pohang, Korea, June, 2021
- *Haptic Interaction in Immersive Environment,* Invited talk: Next Generation System Software Research Group, ETRI, Daejeon, Korea, June, 2021
- *Haptic Interaction in Immersive Environment,* Invited talk: Intelligent Sensor Research Group, ETRI, Daejeon, Korea, June, 2021
- *Towards In-Air Typing in VR with Mid-Air Haptic Feedback,* KAIST CGV Seminar (Invited Talk), KAIST, Daejeon, Korea, May, 2021 (online)
- *Haptic Interaction for the Next Generation of Visual Computing,* Invited talk: School of Arts, Technology & Emerging Communication, The University of Texas at Dallas, Richardson, USA, February, 2021 (online)
- *Haptic Interaction for the Next Generation of Visual Computing,* Young Researcher Award Talk, Seoul National University, Seoul, Korea, August, 2019 (online)
- *Haptic Interaction for the Next Generation of Visual Computing,* Invited talk: Korea Tech, Cheonan, Korea, July, 2019
- *Haptic Interaction in VR",* Invited talk: Computer Graphics and Visualization Lab, School of Computing, KAIST, Daejeon, Korea, June, 2018
- *Haptic Interaction Design for Immersive Environments,* Haptics Interface Research Lab, School of Electrical and Computer Engineering, Purdue University, West Lafayette, IN, USA, February, 2018
- *Haptic Interaction,* Invited talk: Department of Computer Science and Engineering, Kyung Hee University, Yongin, Korea, October, 2017
- *Haptic Interaction,* Invited talk: Department of Information and Telecommunication Engineering, Incheon National University, Incheon, Korea, November, 2016
- *Haptic Interaction,* Invited Talk, School of Electrical and Computer Engineering, Ulsan National Institute of Science and Technology (UNIST), Ulsan, Korea, October, 2016
- *Design and Implementation of a Flat Keyboard with Haptic Feedback,* Haptic Tutorial Session, HCI Korea 2016, Jeongsun, Korea, January 2016
- *Haptic Interaction,* Invited talk: Department of Computer Science, Hanyang University, Seoul, Korea, June 2015
- *Implementing a Flat Keyboard using Piezoelectric Actuators,* Invited talk: KIST, Seoul, Korea, November 2014
- *Touch Typing Performance with Sensory Feedback on a Flat Keyboard,* Invited talk: Department of Computer Science, POSTECH, Pohang, Korea, October 2014
- *A Study of Touch Typing Performance on a Flat Keyboard,* Invited talk: Samsung Electro-Mechanics, Suwon, Korea, September 2014

Teaching Experience

Fall 2022	**CS6326: Human-Computer Interaction**, Instructor	*UT Dallas*
Spring 2022	**CS6334: Virtual Reality**, Instructor	*UT Dallas*
Fall 2021	**CS7301: Recent Advances in Computing - Human-Computer Interaction**, Instructor	*UT Dallas*
Spring 2021	**CS6334: Virtual Reality**, Instructor	*UT Dallas*
Fall 2020	**CS6334: Virtual Reality**, Instructor	*UT Dallas*

Student Advising

2020-present	**Yatharth Singhal**, Ph.D. student, Computer Science at the University of Texas at Dallas
2020-present	**Ayush Bhardwaj**, Ph.D. student, Computer Science at the University of Texas at Dallas
2021-present	**Haokun Wang**, Ph.D. student, ECE at the University of Texas at Dallas
2021-present	**Richard Noeske**, M.S. student, Computer Science at the University of Texas at Dallas
2021-present	**Henry Kim**, B.S. student, Computer Science at the University of Texas at Dallas

Academic Committee

2020-present	**Graduate Student Admissions Committee**, Department of Computer Science, The University of Texas at Dallas
2022	**Doctoral Dissertation Proposal Committee**, Department of Computer Science, The University of Texas at Dallas (Student Name: Yu-Yen Chung)
2021	**Doctoral Qualifier Exam Committee**, School of Arts, Technology & Emerging Communication, The University of Texas at Dallas (Student Name: Elizabeth Stringer)
2022-present	**Doctoral Dissertation Committee**, Ulsan National Institute of Science and Technology (UNIST) (Student Name: Hyunjae Gil)
2021	**Doctoral Dissertation Committee**, School of Computing, Korea Advanced Institute of Science and Technology (KAIST) (Student Name: Jaehyun Jang)

Outreach

STEM Bridge Summer Camp *Richardson, TX*

CAST Texas *Summer 2022*

- Hosted high school students for research and development
- Won third place in the camp program

CS Summer Research Program *Richardson, TX*

Department of Computer Science, The University of Texas at Dallas *Summer 2022*

- Hosted high school students for hands-on research experience in VR and haptics

Professional Memberships

IEEE

Member *2015-present*

ACM

Member *2015-present*

IEEE Technical Committee on Haptics

Member *2021-present*

Korea Haptics Society

Executive Member *2022-present*

References

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