Joohwan Kim

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Research Interests
- Image quality assessment
- Quantitative measurement of user experience
- Computational modeling of visual perception
- Spatial perception of 3D displays

Technical Skills
- Proficient designing skill of user-test based on psychophysics
- Programming language experience: Matlab, OpenGL, C, C++
- Experience in designing and prototyping autostereoscopic and multi-view 3D displays
- Simulation experience on ray optics and wave optics

Research Experience
Research Scientist, Nvidia Research, *Feb 2015-Present*

Assistant Specialist, Vision Science Program, UC Berkeley, *May 2014-Jan 2015*
- Color breakup in DLP projectors: computational modeling and user testing
- Human factors analysis in 3D quantum photonic imagers (Ostendo Inc., Carlsbad, CA, *Jan 2014-Present*)

Postdoctoral Fellow, Vision Science Program, UC Berkeley, *Apr 2009-Apr 2014*
- Human factors analysis in 3D quantum photonic imagers (Ostendo Inc., Carlsbad, CA, *Jan 2014-Present*)
- Human factors and visual artifacts in OLED displays (Samsung, San Jose, CA, *Aug 2012-Dec 2013*)
- Depth perception in color-sequential 3D projectors (Infitec Inc., Germany, *Jun 2012-Jul 2012*)
- Visual fatigue and spatial perceptions in stereoscopic 3D displays (Samsung, Korea, *Jul 2009-Jan 2011*)

Consultant, Samsung, Korea, *May 2011-Jun2011, Oct 2012-Nov 2012*
- Perceived resolution of active-and passive-stereoscopic 3D displays

Education
Ph.D. Electrical Engineering and Computer Science, Seoul National University, Korea, *Mar 2004-Feb 2009*
- Dissertation title: Analysis and enhancement on viewing characteristics of integral floating displays
- Designing and prototyping autostereoscopic and multi-view 3D displays

B.S. Electrical Engineering, Seoul National University, Korea, *Mar 2000-Feb 2003*

Honors and Awards
Distinguished Paper Award at Display Weeks 2014, the Society for Information Display, *Jun 2014*
- Paper title: Motion artifacts on 240Hz OLED stereoscopic 3D displays

Peer-Reviewed Publications
1. Kim, S.-R., Kim, J.-M., Kim, J., and Lee, S.-W. (2016). Effect of ocular dominance on touch position. *Journal of Display Technology* (accepted).
2. Kim, J. (2015). An overview of depth distortion in stereoscopic 3D displays. *Journal of Information Display*, DOI: 10.1080/15980316.2015.1027748.
3. Kim, J. M., Kim, S. R., Kim, M., Kim, J., and Lee, S.-W. (2015). Perceptually reduced crosstalk by

modifying binocular images depending on dominant eye. *Journal of Display Technology,* 11(4), 367-373.
4. Kim, J., Johnson, P. V., and Banks, M. S. (2014). Stereoscopic 3D display with color interlacing improves perceived depth. *Optics Express*, 22(26), 31924-31934.
5. Johnson, P. V., Kim, J., Hoffman, D. M., Vargas, A., and Banks, M. S. (2014). Motion artifacts on 240Hz OLED stereoscopic 3D displays. *Journal of the Society for Information Display*, 22(8), 393-403.
6. Hoffman, D. M., Johnson, P. V., Kim, J., Vargas, A., and Banks, M. S. (2014). 240Hz OLED technology properties that can enable improved image quality. *Journal of the Society of Information Display,* 22(7), 346-356.
7. Johnson, P. V., Kim, J., and Banks, M. S. (2014). The visibility of color breakup and a means to reduce it. *Journal of Vision,* 14(14):10, 1-13.
8. Kim, J., Kane, D., and Banks, M. S. (2014). The rate of change of vergence-accommodation conflict affects visual discomfort. *Vision Research*. 105, 159-165.
9. Park, M.-Y., Kim, J., and Choi, H. (2014). Effect of the Interlacing Methods of Stereoscopic Displays on Perceived Image Quality. *Applied Optics*, 53(3), 520-527.
10. Shibata, T., Kim, J., Hoffman, D. M., and Banks, M. S. (2011). The zone of comfort: predicting visual discomfort with stereo displays. *Journal of Vision*, 11(8):11, 1-29.
11. Kim, J., Park, G., Kim, Y., Min, S.-W., and Lee, B. (2009). Elimination of image discontinuity in integral floating display by using adaptive image mapping. *Applied Optics*, 48(34). H176-H185.
12. Jung, J.-H., Kim, Y., Kim, Y., Kim, J., Hong, K., and Lee, B. (2009). An integral imaging system using electroluminescent film backlight for 3D-2D convertibility and curved structure. *Applied Optics*, 48 (5). 998-1007.
13. Kim, J., Kim, Y., Choi, H., Cho, S.-W., Kim, Y., Park, J., Park, G., Min, S.-W., and Lee, B. (2009). Implementation of polarization-multiplexed tiled projection integral imaging system. *Journal of the Society for Information Display*, 17(5). 411-418.
14. Kim, J., Min, S.-W., and Lee, B. (2009). Viewing window expansion of integral floating display. *Applied Optics*, 48(5). 862-867.
15. Kim, Y., Kim, J., Kim, Y., Choi, H., Jung, J.-H., and Lee, B. (2008). Thin-type integral imaging method with an organic light emitting diode panel. *Applied Optics*, 47(27). 4927-4934.
16. Kim, J., Min, S.-W., Kim, Y., and Lee, B. (2008). Analysis on viewing characteristics of integral floating system. *Applied Optics*, 47(19). D80-D86.
17. Kim, J., Min, S.-W., and Lee, B. (2008). Floated image mapping for integral floating display. *Optics Express*, 16(12). 8549-8556.
18. Choi, H., Kim, J., Cho, S.-W., Kim, Y., Park, J. B., and Lee, B. (2008). Three-dimensional-two-dimensional mixed display system using integral imaging with an active pinhole array on a liquid crystal panel. *Applied Optics*, 47(13). 2207-2214.
19. Kim, Y., Kim, J., Kang, J.-M., Jung, J.-H., Choi, H., and Lee, B. (2007). Point light source integral imaging with improved resolution and viewing angle by the use of electrically movable pinhole array. *Optics Express*, 15(26). 18253-18267.
20. Kim, Y., Choi, H., Cho, S.-W., Kim, Y., Kim, J., Park, G., and Lee, B. (2007). Three-dimensional integral display using plastic optical fibers. *Applied Optics*, 46(29). 7149-7154.
21. Kim, J., Min, S.-W., and Lee, B. (2007). Viewing region maximization of an integral floating display through location adjustment of viewing window. *Optics Express*, 15(20). 13023-13034.
22. Kim, Y., Choi, H., Kim, J., Cho, S.-W., Kim, Y., Park, G., and Lee, B. (2007). Depth-enhanced integral imaging display system with electrically variable image planes using polymer-dispersed liquid crystal layers. *Applied Optics*. 46(18). 3766-3773.
23. Choi, H., Kim, Y., Kim, J., Cho, S.-W., and Lee, B. (2007). Depth- and viewing-angle-enhanced 3-D/2-D switchable display system with high contrast ratio using multiple display devices and a lens array. *Journal of the Society for Information Display*, 15(5). 315-320.
24. Cho, S.-W., Park, J.-H., Kim, Y., Choi, H., Kim, J., and Lee, B. (2006). Convertible two-dimensional-three-dimensional display using an LED array based on modified integral imaging. *Optics Letters*, 31(19). 2852-2854.

25. Kim, Y., Park, J.-H., Choi, H., Kim, J., Cho, S.-W., and Lee, B. (2006). Depth-enhanced three-dimensional integral imaging by use of multilayered display devices. *Applied Optics*, 45(18). 4334-4343.
26. Choi, H., Cho, S.-W., Kim, J., and Lee, B. (2006). A thin 3D-2D convertible integral imaging system using a pinhole array on a polarizer. *Optics Express*, 14(12). 5183-5190.
27. Choi, K., Kim, J., Lim, Y., and Lee, B. (2005). Full parallax viewing-angle enhanced computer-generated holographic 3D display system using integral lens array. *Optics Express*, 13(26). 10494-10502.
28. Choi, H., Park, J.-H., Kim, J., Cho, S.-W., and Lee, B. (2005). Wide-viewing-angle 3D/2D convertible display system using two display devices and a lens array. *Optics Express*, 13(21). 8424-8432.
29. Park, J.-H., Kim, J., Bae, J.-P., Kim, Y., and Lee, B. (2005). Viewing angle enhancement of three-dimension / two-dimension convertible integral imaging display using double collimated or non-collimated illumination. *Japanese Journal of Applied Physics*, 44(31). L991-L994.
30. Choi, H., Kim, Y., Park, J.-H., Kim, J., Cho, S.-W., and Lee, B. (2005). Layered-panel integral imaging without the translucent problem. *Optics Express*, 13(15). 5769-5776.
31. Park, J.-H., Kim, J., and Lee, B. (2005). Three-dimensional optical correlator using a sub-image array. *Optics Express*, 13(13). 5116-5126.
32. Min, S.-W., Hahn, M., Kim, J., and Lee, B. (2005). Three-dimensional electro-floating display system using an integral imaging method. *Optics Express*, 13(12). 4358-4369.
33. Park, J.-H., Kim, J., Kim, Y., and Lee, B. (2005). Resolution-enhanced three-dimension/two-dimension convertible display based on integral imaging. *Optics Express*, 13(6). 1875-1884.
34. Park, J.-H., Choi, H., Kim, Y., Kim, J., and Lee, B. (2005). Scaling of three-dimensional integral imaging. *Japanese Journal of Applied Physics*, 44(1A). 216-224.
35. Min, S.-W., Kim, J., and Lee, B. (2005). New characteristic equation of three-dimensional integral imaging system and its applications. *Japanese Journal of Applied Physics*, 44(2). L71-L74.
36. Park, J.-H., Kim, H.-R., Kim, Y., Kim, J., Hong, J., Lee, S.-D., and Lee, B. (2004). Depth-enhanced three-dimensional-two-dimensional convertible display based on modified integral imaging. *Optics Letters*, 29(23). 2734-2736.
37. Park, J.-H., Kim, Y., Kim, J., Min, S.-W., and Lee, B. (2004). Three-dimensional display scheme based on integral imaging with three-dimensional information processing. *Optics Express*, 12(24). 6020-6032.
38. Min, S.-W., Kim, J., and Lee, B. (2004). Wide-viewing projection-type integral imaging system with an embossed screen. *Optics Letters*, 29(20). 2420-2422.