

# Seokbin KANG

CS/HCI PhD student

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## RESEARCH FOCUS

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My research interests include Human-Computer Interaction, Mixed Reality, and Natural User Interface. I am specifically interested in designing and evaluating novel interactive learning systems for children, solving related technical problems in computer vision, graphics, and machine learning. I am currently working on PhD dissertation research that is aimed at developing AR learning systems for playful Science, Technology, Engineering, and Math (STEM) education.

## EDUCATION

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- Present     **PhD Student, Computer Science**, University of Maryland, College Park  
Area: HCI, AR/VR, interactive learning systems; Advisor: Jon Froehlich
- 2009     **MS, Computer Science and Engineering**, Seoul National University, South Korea  
Thesis: *Exploiting idle cache on chip multi-processors*; Advisor: Chushik Jhon
- 2007     **BS, Computer Science and Engineering**, Seoul National University, South Korea

## EMPLOYMENT

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- 2017     **Microsoft Research Cambridge**  
May-Aug     *Research Intern*
- Present     **University of Maryland, College Park, Computer Science**  
– 2015     *Graduate Research Assistant*
- 2014     **Electronics and Telecommunications Research Institute, Interactive Learning Research Group**  
– 2009     *Research Staff*
- 2009     **Seoul National University, Computer Science and Engineering**  
– 2007     *Graduate Research Assistant*

## HONORS AND AWARDS

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- 2016     **NSF 2016 Video Showcase: Advancing STEM for All, Facilitator's Choice**  
*BodyVis: Advancing New Science Learning and Inquiry Experiences via Custom-Designed Wearables On-Body Sensing and Visualization*
- 2014     **PhD Graduate Study Fellowship (5yr)**, Kwanjeong Educational Foundation
- 2007     **MS Graduate Study Fellowship (2yr)**, Brain Korea 21
- 2003     **Undergraduate Study Scholarship (4yr)**, National Scholarship for Science and Engineering

## PUBLICATION

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**Kang, S.**, Norooz, L., Byrne, V., Clegg, T., & Froehlich, J. E. (2018). Prototyping and Simulating Complex Systems with Paper Craft and Augmented Reality: An Initial Investigation. In Proceedings of the Twelfth International Conference on Tangible, Embedded, and Embodied Interaction (pp. 320-328). ACM.

Clegg, T., Norooz, L., **Kang, S.**, Byrne, V., Katzen, M., Valez, R., Plane, A., Oguamanam, V., Outing, T., Yip, J., Bonsignore, E., & Froehlich, J. (2017). "Live Physiological Sensing and Visualization Ecosystems: An Activity Theory Analysis". In Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems. ACM.

**Kang, S.**, Norooz, L., Oguamanam, V., Plane, A., Clegg, T., & Froehlich, J. (2016). "SharedPhys: Live Physiological Sensing, Whole-Body Interaction, and Large-Screen Visualizations to Support Shared Inquiry Experiences". In Proceedings of the The 15th International Conference on Interaction Design and Children. ACM

Norooz, L., Clegg, T., **Kang, S.**, Plane, A., Oguamanam, V., & Froehlich, J. (2016) ""That's your heart!": Live Physiological Sensing & Visualization Tools for Life-Relevant & Collaborative STEM Learning". In Proceedings of ICLS 2016

**Kang, S.**, Lee, Y., & Lee, S. (2015). "Kids in Fairytales: Experiential and Interactive Storytelling in Children's Libraries". In Proceedings of the 33rd Annual ACM Conference Extended Abstracts on Human Factors in Computing Systems. ACM.

Najafizadeh, L., **Kang, S.**, & Froehlich, J. E. (2015). I Like This Shirt: Exploring the Translation of Social Mechanisms in the Virtual World into Physical Experiences. In Proceedings of the 33rd Annual ACM Conference Extended Abstracts on Human Factors in Computing Systems. ACM.

Lee, S., Yun, J., **Kang, S.**, & Lee, J. (2013). "Design and Implementation of Plug-in based Interactive e-book Authoring System". In Proceedings of International Conference on Convergence Content 2013, 11(2).

Kwak, J. W., **Kang, S.**, & Jhang, S. T. (2013). On-chip Inter-victim Cache Architecture and its Snooping Protocol for Shared Bus-based CMP Systems. International Information Institute (Tokyo). Information, 16(5), 3185.

Ko, J., Lee, S., **Kang, S.**, & Lee, J. (2011). Hybrid Camera Based Real-Time Human Body Segmentation for Virtual Reality E-learning System. In Computers, Networks, Systems and Industrial Engineering (CNSI), 2011 First ACIS/JNU International Conference on. IEEE.

Lee, S., Ko, J. G., **Kang, S.**, & Lee, J. (2010, October). An immersive e-learning system providing virtual experience. In Mixed and Augmented Reality (ISMAR), 2010 9th IEEE International Symposium on. IEEE.

## PATENTS

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Lee, S. W., **Kang, S. B.**, Lim, S. H., & Lee, J. S. (2016). "Apparatus for extracting image object in 3D image system and method thereof." U.S. Patent No. 9,294,753.

**Kang, S.**, Lee, J., Ko, J., Lee, S., & Lee, J. (2012). "Image Separation Apparatus and Method", U.S. Patent No. 20,120,121,191-A1

Lee, J., **Kang, S.**, Kim, S. Y., Yoo, J. S., & Lee, J. (2012). "Apparatus and method for recognizing multi-user interactions." U.S. Patent No. 20,120,163,661.

Lee, S. W., Lee, J., **Kang, S.**, Sung, J., & Lee, G. H. (2012). "Apparatus and method for authoring experiential learning content." U.S. Patent No. 20,120,107,790.

## TECHNICAL SKILLS

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**Programming** C/C++/C#, Java, Javascript, Python, Matlab, SQL, HTML

**Projects** OpenCV, Kinect, CUDA, Physx, D3, Android, Arduino, V8 JS engine, Unity3D

## REFERENCES

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**Jon Froehlich**  
*Assistant Professor*  
Department of Computer Science  
University of Maryland, College Park  
jonf@cs.umd.edu

**Tamara Clegg**  
*Assistant Professor*  
College of Education and iSchool  
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