

Seokbin KANG

PhD Candidate in Computer Science

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I am currently looking for a full-time engineer or research position starting in early 2020. I am passionate about developing interactive systems that leverage machine learning, computer vision, and sensing technologies to support novel user interactions. My research interests include Human-Computer Interaction, Augmented Reality, and Tangible User Interface.

EDUCATION

- Present **PhD Candidate, Computer Science**, University of Maryland, College Park
Area: Huma Computer Interaction, Augmented Reality, Physical Computing; Advisor: *Jon Froehlich*
- 2009 **MS, Computer Science and Engineering**, Seoul National University, South Korea
Area: Computer Architecture, Parallel System; Advisor: *Chushik Jhon*
- 2007 **BS, Computer Science and Engineering**, Seoul National University, South Korea

EMPLOYMENT

- Present **University of Maryland, College Park, Computer Science**
– 2015 *Graduate Research Assistant: design, develop, and evaluate AR systems that use physiological sensing and computer vision for supporting novel user interactions.*
- 2017 **Microsoft Research Cambridge**
May-Aug *Research Intern: design and develop a physical-and-digital construction toolkit that include tangible computational blocks and interactive web interface for biological experiments.*
- 2014 **Electronics and Telecommunications Research Institute (ETRI)**
– 2009 *Researcher: develop components of a mixed-reality system including multi-camera based human image segmentation, whole-body interaction, and mixed-reality physics simulation.*
- 2009 **WinnerDigm Inc.**
Engineer: develop an advanced web crawler that simulates user interactions in interactive web pages, using the V8 JavaScript engine along with HTML DOM libraries.
- 2009 **Seoul National University, Computer Science and Engineering**
– 2007 *Graduate Research Assistant: explore multi-core memory architectures, developing an ARM system simulator.*

HONORS AND AWARDS

- 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

Kang, S., Norooz, L., Bonsignore, E., Clegg, Byrne, V., Clegg, T., & Froehlich, J. (2019). "PrototypAR: Prototyping and Simulating Complex Systems with Paper Craft and Augmented Reality". In Proceedings of the The 18th International Conference on Interaction Design and Children. ACM.

Byrne, V. L., **Kang, S.**, Norooz, L., Froehlich, J., Clegg, T. (2019). Bringing life-relevant embodied learning with e-textiles into the classroom: Tensions with classroom rules and academic norms. American Educational Research Association annual meeting. Toronto, ON.

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.

Byrne, V., **Kang, S.**, Norooz, L., Velez, R., Addeh, A., Froehlich, J., & Clegg, T. (2018). Scaffolding Authentic Wearable--Based Scientific Inquiry for Early Elementary Learners. Proceedings of ICLS 2018.

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

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

Programming C/C++/C#, Java/Javascript, HTML, Python, Matlab, SQL, VHDL/Verilog.

Projects OpenCV, Unity3D, TensorFlow, CUDA, PhysX, V8, D3, Android, Arduino

REFERENCES

Jon Froehlich
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Paul G. Allen School of Computer Science &
Engineering
University of Washington
jonf@cs.washington.edu

Tamara Clegg
Assistant Professor
College of Education and iSchool
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