

# SeungJun Kim

(U.S. Permanent Resident)

Systems Scientist, Human-Computer Interaction Institute (HCII)  
School of Computer Science, Carnegie Mellon University (CMU)

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## EDUCATION

**Ph.D. and M.S. in Mechatronics** **Feb 2006 / Aug 2000**  
System Integration Laboratory, Gwangju Institute of Science and Technology, Gwangju, South Korea

- Dissertation: *Integration of Augmented Reality Interfacing Method for Prototype 3D Applications*
- M.S. thesis: *Implementation of a PC-based 3-D Robot Simulator Using OpenGL*

**B.S. in Electrical and Electronics Engineering** **Feb 1998**  
Korea Advanced Institute of Science and Technology, Daejeon, South Korea

## WORK EXPERIENCE

**Systems Scientist** **Sep 2011 – present** (reappointed – Oct 2014)  
Human-Computer Interaction Institute, School of Computer Science, Carnegie Mellon University,  
Pittsburgh, PA, USA

- Research projects:
  - Sensor-based assessment of end-user's interaction capability for proactive information services in mobile contexts
  - Usable machine-learning toolkit for the analysis of time-series sensor data streams and multimedia records
  - Sensor-incorporated mixed-methods approach for real-time cognitive load assessment and experience sampling
  - Quality of HCI experiences in the cars based on understanding of human capabilities in attention and cognition
  - Multimodal fusion for Smartphone interaction and route guidance systems
  - Wearable UI/UX and Virtual Reality & Augmented Reality UI/UX
- Funding sources: Technologies for Safe and Efficient Transportation, NSF Expeditions in Computing, Draper Laboratory, General Motors, the NSF, the Quality of Life Engineering Research Center at Carnegie Mellon University, Korea Institute for Advancement of Technology and Samsung Dallas R&D Center

**Post-doctoral Fellow** **Sep 2006 – Aug 2011**  
Human-Computer Interaction Institute, School of Computer Science, Carnegie Mellon University,  
Pittsburgh, PA, USA

- Supervised by Professor Anind K. Dey and Professor Jodi Forlizzi

- Research projects
  - Quality of life technologies for safe driving of elderly drivers
    - Cognitive mapping aid for elder driver navigation
    - Aesthetics and usability of car dashboard displays
    - Psycho-physiological assessment of cognitive load during elementary cognitive tasks
  - Post-hoc dissertation study on Augmented Reality interfacing with prototype 3D applications
- Funding sources: General Motors, the NSF, Quality of Life Engineering Research Center at Carnegie Mellon University and National Research Foundation of Korea (previously, KRF)

**Post-doctoral Fellow**

**Mar 2006 – Aug 2006**

Human-Machine-Computer Interface Laboratory, Department of Mechatronics, Gwangju Institute of Science and Technology, Gwangju, South Korea

- Supervised by Professor Byungha Ahn and Professor Jeha Ryu
- Research projects
  - Realistic Digital Broadcasting by using Haptics and Augmented Reality technology
  - Post-hoc dissertation work - software registrations: 1) primitive design program for 3D graphic prototyping, 2) 3D graphic viewer for SMF-based street modeling, 3) 3D robot control simulator SARA and 4) 3D spacecraft attitude control simulation program
- Funding sources: Brain Korea 21 and GIST Technology Initiative

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**RESEARCH EXPERIENCE**

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**Graduate Research Fellow**

**Sep 2004 – Dec 2005**

Human-Machine-Computer Interface Laboratory, Department of Mechatronics, Gwangju Institute of Science and Technology, Gwangju, South Korea

- Participated in *Futuristic Realistic Digital Broadcasting Technology* project, Realistic Broadcasting IT Research Center
- Developed an evaluation test-bed for interactive broadcasting production using augmented reality and haptics
- Supported by the Ministry of Information and Communication of Korea

**Visiting Research Fellow**

**Jan 2003 – Jun 2003**

Ergonomics in Teleoperation and Control Laboratory, Department of Mechanical and Industrial Engineering, University of Toronto, Canada

- Supervised by Professor Paul Milgram
- Developed a 3D emulator for virtual car-overtaking simulation in augmented reality scene as participating in the project of *Stereoscopic AR Automobile Driving Simulator*
- Supported by Brain Korea 21

**Visiting Research Fellow**

**Jan 2002 – Feb 2002**

Human Friendly Systems Research Group, Intelligent Systems Institute in National Institute of Advanced Industrial Science and Technology, Japan

- Developed a 3D simulator for walking humanoid robot
- Supported by Japan International Science & Technology Exchange Center, Winter Institute Fellow

**Student PI****Sep 2000 – Jul 2001**

System Integration Laboratory, Department of Mechatronics, Gwangju Institute of Science and Technology, Gwangju, South Korea

- Led *Web-based Dynamic 3D Tourist Guide Software Development* project
- Developed a web-based 3D Traveler Guidance Service system for macroscopic test-area
- Supported by the Ministry of Construction and Transportation of Korea, Joint Research of GIST and SIMTECH systems INC in Korea

**Student PI****Apr 2000 – Jul 2002**

System Integration Laboratory, Department of Mechatronics, Gwangju Institute of Science and Technology, Gwangju, South Korea

- Led *Spacecraft Attitude and Orbit Precision Control - A new methodology for spacecraft control: theory & applications* project
- Developed a 3D spacecraft simulator and attitude controllers
- Supported by the Ministry of Science and Technology of Korea, Joint Project of GIST in Korea and Ben-Gurion University of the Negev in Israel

**Student PI****Aug 1999 – Aug 2000**

System Integration Laboratory, Department of Mechatronics, Gwangju Institute of Science and Technology, Gwangju, South Korea

- Led *Development of Human-Machine Interface product in virtual environments* project
- Developed a 3D robot simulator that demonstrates set-point controls of robot systems with uncertain parameters
- Supported by the Ministry of Science and Technology of Korea, Joint Research with BG Technology in GIST.

**Research Fellow****Aug 1998 – Aug 1999**

System Integration Laboratory, Department of Mechatronics, Gwangju Institute of Science and Technology (GIST), Gwangju, South Korea

- Participated in *Survey research for the development of the high precision industrial robots between the Korea-Finland local provinces* project
- Investigated the trend of robot industry in Korea and Finland
- Supported by the Ministry of Science and Technology of Korea

**MENTORING / TEACHING EXPERIENCE****Mentor (Research Assistants or Independent study students)****2008 – present**

Human-Computer Interaction Institute, School of Computer Science, Carnegie Mellon University, Pittsburgh, PA, USA

- Raghavendra Kandala (2016), Masters in Design, Carnegie Mellon University
- Daniel Lee (2015 – present), Economics and Computer Science, Carnegie Mellon University
- Nana Choi (2015), Masters in Human-Computer Interaction, Carnegie Mellon University
- Young Hyun Kim (2015), Computer Science and Mathematics, Carnegie Mellon University
- Helen Kim (2015 – present), Information Systems, Carnegie Mellon University

- Peter Weon (2015), Business Administration in the Tepper School of Business, Carnegie Mellon University
- Brandon Lee (2015), Mathematical Sciences, Carnegie Mellon University
- Yun Gi (Lisa) Jung (2014), Information Systems and Human-Computer Interaction, Carnegie Mellon University
- Jae-Won Kim (2013 - 2015), Psychology, Carnegie Mellon University
- Carloyn Purta (2012 - 2013), Psychology, Carnegie Mellon University
- Kimberley Nederlof (2009 - 2011), Psychology (Minor in Business Administration and Photography), Carnegie Mellon University
- Lawren Kim (2008), MSIT eBusiness Technology, Carnegie Mellon University

**Mentor (Ph.D. Student, Visiting scholars, and Post-doctoral researchers) 2012 - present**  
 Human-Computer Interaction Institute, School of Computer Science, Carnegie Mellon University,  
 Pittsburgh, PA, USA

- Dr. Jaemin Chun (2014 - present, post-doctoral researcher), *Immersive Situation Awareness* (Draper Laboratory), *Development of UI/UX Technology to Overcome the Limitations of Wearable Device UIs* (KETI/KIAT), and *Sensor-based Assessment of the In-Situ Quality of Human-Computer Interaction in Cars* projects
- Dr. Sunyoung Cho and Jung Wook Park (2015 - present, post-doctoral researcher and visiting scholar, respectively), *Sensor-based Assessment of the In-Situ Quality of Human-Computer Interaction in Cars* project (T-SET UTC)
- Patrick Alexander Carrington (2012), visiting scholar from the Human-Centered Computing program at University of Maryland Baltimore County, May 20 ~ Jul 28, 2012 (through a Quality of Life Technology Center Summer Bridge Program at Carnegie Mellon University), *Designing Visual Feedback Cues to Support Intelligibility in Autonomous Cars* project

**Special Lecturer 2006**  
 Department of Mechatronics, Gwangju Institute of Science and Technology, Gwangju, South Korea

- Lectured on *Augmented Reality technology and its applications* (spring semester).

**Laboratory Assistant 2006**  
 Department of Mechatronics, Gwangju Institute of Science and Technology, Gwangju, South Korea

- Assisted a term-project: *Virtual Cane for Blind People* in the lecture of *Virtual Environments and Haptics*

**Laboratory Assistant 2015**  
 Department of Mechatronics, Gwangju Institute of Science and Technology, Gwangju, South Korea

- Supervised master's thesis study: *AR-based fingertip interaction for microscopic test-section*

**Teaching Assistant 2001**  
 Department of Mechatronics, Gwangju Institute of Science and Technology, Gwangju, South Korea

- Supervised master's term project for a semester: *Vision-based Tele-operation of Two-link SCARA Robot* in the lecture of *Mechatronics Project*

## INVITED TALKS

**Samsung S/W center**  
 Artificial Intelligence Lab, Seoul, South Korea

**Aug 11, 2016**

- Topic – *Improving the Quality of Driver Experience in Ubiquitous Human-Computer Interaction Situations in Cars*

**Gwangju Institute of Science and Technology (GIST)** **Aug 9, 2016**  
 Institute of Integrated Technology, Gwangju, South Korea

- Topic – *Improving User Experience in Ubiquitous Human-Computer Interaction Situations (Enabling Computers to Know the When, How, and What of Interaction with Humans)*

**Korea Electronics Technology Institute (KETI)** **Apr 28, 2016**  
 Contents Convergence Research Center, Seoul, South Korea

- Topic - *Machine Learning Applications in Human-Computer Interaction*

**Korea Electronics Technology Institute (KETI)** **Apr 20, 2016**  
 IoT Platform Research Center

- Topic - *Sensors Know When to, How to, and What to Interact with Human*

**Hyundai Motor Company** **Apr 19, 2016**  
 Human Factors and Devices Research Group, Uiwang, South Korea

- Topic – *Driver Experience in Ubiquitous HCI in Cars*

**The University of Alabama At Birmingham (UAB)** **Feb 17, 2016**  
 Dept. of Computer and Information Sciences, Birmingham, Alabama, USA

- Topic – *Improving User Experience in Ubiquitous Human-Computer Interaction Situations (Sensor-based approaches to better understanding human capability in attention and cognition)*

**Korea Electronics Technology Institute (KETI)** **Apr 29, 2015**  
 Contents Convergence Research Center, Seoul, South Korea

- Topic – *Improving User Experience in Ubiquitous Human-Computer Interaction Situations*

**Samsung S/W center** **Apr 23, 2015**  
 Frontier CS Lab, Suwon, South Korea

- Topic – *Improving User Experience in Ubiquitous Human-Computer Interaction Situations: Sensor-based Approach to Better Understand Human Capability in Attention and Cognition*

**MIPS (Mobile Interfaces and Pedagogical Systems Group)** **Jan, 2015**  
 Department of Computer Science, University of Pittsburgh, Pittsburgh, USA

- Topic – *Improving User Experience in Ubiquitous Human-Computer Interaction Situations - Sensor-based approaches to better understanding human capability in attention and cognition*

**Technologies for Safe and Efficient Transportation** **Feb 2014**  
 Carnegie Mellon University, Pittsburgh, USA

- Topic - *In-Situ Monitoring of Driver Workload*

**Quality of Life Technology coordination meeting** **Dec 2013**  
 Carnegie Mellon University, Pittsburgh, USA

- Topic - *Driver's Availability for Peripheral Interactions during Naturalistic Driving*

**LG Electronics and LG Uplus Corp.** **Nov 2013**  
 Research & Development Campuses, Seoul, South Korea

- Topic - *Human-Vehicle Interaction Projects in Quality of Life Technology Center*

**Korea Electronics Technology Institute (KETI)** **Nov 2013**  
 Realistic Media Platform Research Center, Seoul, South Korea

- Topic - *HCI techniques in cyber-physical systems: driver-centered intelligence*

**Ulsan National Institute of Science and Technology (UNIST)** **Nov 2013**  
 School of Design and Human Engineering, Ulsan, South Korea

- Topic - *Quality of Life and HCI - Interaction techniques for elderly drivers*

**Quality of Life Technology coordination meeting** **Oct 2012**  
 Carnegie Mellon University, Pittsburgh, USA

- Topic - *Interaction Techniques for Elder Drivers*

**Quality of Life Technology coordination meeting** **Dec 2011**  
 Carnegie Mellon University, Pittsburgh, USA

- Topic - *Route Guidance Modality for Elderly Driver Navigation*

### INVITED PRESENTATIONS FOR VISITORS OR IN TELECONFERENCE

**Delphi Automotive PLC** **Jun 28, 2016**  

- Topic – *Real-time Detection of Driver Interruptibility*

**Keio University** **Aug 10, 2015**  

- Topic – *Improving User Experience in Ubiquitous Human-Computer Interaction Situations*

**Equos Research Co., Ltd.** **Mar 20, 2015**  

- Topic 1 – *Improving User Experience in Ubiquitous Human-Computer Interaction Situations: Sensor-based approach to better understand human capability in attention and cognition*
- Topic 2 – *Sensor Know When to Interrupt You In the Car: Detecting Driver Interruptibility Through Monitoring of Peripheral Interactions*

**Samsung S/W center** **Oct 9, 2014**  

- Topic – *Improving the Quality of Ubiquitous Human-Computer Interaction Experience: Sensor-based approach to better understand human capability in attention and cognition*

**Takata** **Sep 5 & 25, 2014**  

- Topic – *Driver Workload Assessment in Human-Vehicle Interaction Projects*

**CBD Brilliant** **Jan 28, 2014**  

- Topic - *Cognitive Load Assessment in Human-Vehicle Interaction Projects*

**LG Electronics and National Rehabilitation Center** **Jan 24 – 25, 2014**  

- Topic 1 - *Quality of Life and HCI: Interaction Techniques for Elder Drivers*

- Topic 2 - *Human-Vehicle Interaction Projects in Quality of Life Technology Center*

**Toyota** **May 3, 2013**

- Topic - *Interaction Techniques for Elder Drivers: Reducing Cognitive Demands in Drive-Vehicle Interaction for Elder Drivers*

**General Electric (Aviation) and VW Audi** **Aug 10 / Oct 22, 2012**

- Topic - *Cognitive Load in Mobile Context: Human-Vehicle Interaction of Elderly Drivers*

**Caterpillar and Hyundai Kia America Technical Center** **Aug 2 & 8, 2012**

- Topic - *Situational Cognitive Load in Mobile Context (Attention-switching Issues of Elderly Drivers)*

**Nissan and Brighten Works** **Dec 9, 2011**

- Topic - *Attention-switching Issues of Elderly Drivers and Situational Cognitive Load in Mobile Context*

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## LEADERSHIP ROLES

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**Local Organizer (International Conference)** **Nov 2010**

- 2nd International Conference on Automotive User Interfaces and Interactive Vehicular Applications (Automotive UI 2010), Carnegie Mellon University, Pittsburgh, PA

**Student Representative (Laboratory)** **2005-2006**

- System Integration Laboratory, Department of Mechatronics, Gwangju Institute of Science and Technology, Gwangju, South Korea

**Vice-director/Announcer (In-campus organization)** **1993-1996**

- ‘Campus broadcasting station, Korea Advanced Institute of Science and Technology, Daejeon, South Korea - organized a singing competition in campus festival (1994) and annual broadcasting events (1994 – 1995)

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## RECENT PROFESSIONAL ACTIVITIES

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- ACM Professional Member (2009 – present)
- Peer reviewer, ACM CHI (2009, 2011, 2012, 2014 - present)
- Program Committee Member, Automotive UI (2010, 2012 - present)

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## AWARDS AND SCHOLARSHIPS

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- Post-doctoral scholarship from National Research Foundation of Korea 2006 – 2007
  - Project title - Augmented Reality Interface in Context-Aware Environments, as PI.
  - Supported by the Korea Research Foundation Grant funded by the Korean Government (KRF-2006-352-D00167).
- Full tuition scholarship from Korean government 1993 – 2005
- Scholarship from Brain Korea 21 project 2000 – 2004
- Project stipends 1999 – 2002, 2004 – 2005

- The best item award for business item competition May 2001
  - 1st prize of four million won / Promoted by Gwangju Jeonnam, Small and Medium Business Administration
- Others: one patent and four software registrations (in South Korea)

## PATENTS / INVENTION DISCLOSURES / SOFTWARE ARTIFACTS

- **SeungJun Kim**, Anind K. Dey, and Jaemin Chun. "Sensor-based Assessment of Driver Interruptibility". Non-provisional patent application, May 2016 (US).
- **SeungJun Kim**, Anind K. Dey, and Jaemin Chun. "Sensor-based Assessment of Driver Interruptibility," CMU Invention Disclosure 2015-396, April 2015 (US).
- Anind K. Dey, Kevin A. Li, **SeungJun Kim**, Jodi Forlizzi, and Jin-Hyuk Hong. "Vibrotactile steering wheel for route guidance support in car," CMU Invention Disclosure 2013-150, January 2013 (US)
- Anind K. Dey, Jodi Forlizzi, Eija Haapalainen and **SeungJun Kim**. "Sensor-based Assessment of Cognitive Load," CMU Invention Disclosure 2010-076, Mar 2010 (US)
- Anind K. Dey and **SeungJun Kim**. "Windshield-based augmented reality 2.5D in-vehicle navigation display," CMU Invention Disclosure 2009-040, Nov 2008 (US)
- **SeungJun Kim** and Byungha Ahn. Program registrations, Jun 2006 (GTI, South Korea)
  - 3D robot control simulator Simulation & Animation for Robot Analysis
  - 3D graphic viewer for SMF-based virtual street design
  - 3D spacecraft attitude control simulation program
  - Program for designing graphical primitives for 3D prototyping
- Byungha Ahn, **SeungJun Kim**, et al. "Flying robot airship for spraying agricultural pesticide" (application number: 99-5817, registration number: 0253761), Jan 2000 (South Korea)

## SELECTED PRESS

- "[Road safety. Driven from distraction - How to save phone-using from themselves](#)", The Economist , Science and technology, 25 Apr 2015 (by Paul Marks)
- "[AT&T Reinvents the Steering Wheel](#)," *MIT Technology Review*, Mar 22, 2012 (by David Talbot)
- "[Vibrating steering wheel could help drivers navigate](#)," *CNN: What's Next*, Mar 28, 2012 (by Brandon Griggs)
- "[Good vibrations that tell you when it's time to turn](#)," *The Sunday Times (UK)*, Apr 1, 2012 (by Mark Harris)
- "[New sat-nav vibrates the sides of your steering wheel to tell you where to go - and could save dozens of lives a year](#)," *The Daily Mail (UK)*, Apr 2, 2012 (By Rob Waugh)
- "[Vibrating Steering Wheel Guides Drivers While Keeping Their Eyes on the Road](#)," *Carnegie Mellon News*, Apr 24, 2012 (by Byron Spice)
- "[Driving, With Feeling](#)," *The Wall Street Journal*, Apr 27, 2012 (by Christopher Shea)
- "[Driver Safety](#)," *CMU Homepage Stories: Next-Generation Computing*, Apr 30, 2012 (by CMU)
- "[Vibrating Steering Wheel Transmits Safer, Improved Driving](#)," *Inside Science TV*, Nov 13, 2012 (by Karin E Heineman)

## CURRENT AND PENDING SUPPORT



## Awarded

- US Department of Transportation, Technologies for Safe and Efficient Transportation, The National USDOT University Transportation Center for Safety, (Jan 1, 2016 – Dec 31, 2016)
  - Principal Investigator
  - *Sensor-based Assessment of the In-Situ Quality of Human-Computer Interaction in the Cars*, **\$80,000**
- ProSEED/Simon Initiative (Jan 1, 2015 – Jun 30, 2016)
  - Principal Investigator
  - *Sensor-based Assessment of Student In-Situ States in Attention and Cognition during Computer-based Geometry Problem-Solving Tasks*, **\$20,000**
- US Department of Transportation, Technologies for Safe and Efficient Transportation, The National USDOT University Transportation Center for Safety, (Jan 1, 2015 – Dec 31, 2015)
  - Principal Investigator
  - *Sensor-based Assessment of the In-Situ Quality of Human-Computer Interaction in the Cars*, **\$70,918**
- International Collaborative R&D Program of Korea Institute for Advancement of Technology (Nov 1, 2014 – Oct 31, 2017)
  - Principal Investigator of international partner (lead group – Korea Electronics Technology Institute)
  - *Development of UI/UX Technology to Overcome the Limitations of Wearable Device UIs*, **\$273,600**
- US Department of Transportation - ICES: DOT-UTC National Level proposal (Jan 1, 2014 – Dec 31, 2014)
  - Principal Investigator
  - *In-Situ Monitoring of Driver Workload*, **\$40,000** (from Total: **\$11,997,958**, Sep 1, 2013 – Sep 30, 2017)
- Samsung Electronics, Co, LTD (May 1, 2012 – Apr 30, 2013)
  - Project Leader
  - *Multimodal Fusion for Interaction*, **\$109,284**

## Under review / Ready for resubmission

- NineSigma (Apr 1, 2015 – Mar 31, 2018)
  - Principal Investigator
  - *Improvement of the intelligence of in-vehicle information intervention through assessing in-situ driver interruptibility by using sensors*, **\$300,000**
  - Passed the 1<sup>st</sup> round
- Federal Highway Administration (1 year)
  - Senior Researcher
  - *Visual Feature Extraction from Driver's Videos*, **\$250,000**
- National Highway Traffic Safety Administration (NHTSA) IDIQ, PI: VTTI, as Project member in a subcontract team
- Metro21 Initiative (1-year project, and project start date - no earlier than 12/01/2014)
  - Principal Investigator
  - *Gimlets\_Metro: Development of a Graphical Interactive Machine Learning Tool, Especially for Time Series from the Sensor-deployed Metro Areas and Public Transportation Systems*, **\$60,000**.
- Institute of Education Sciences (IES), *Supporting Computer-based Geometry Tutoring through Learners' Eye Tracking Patterns and Real-time Cognitive Load*, Cognition and Student Learning, Exploration (Goal One), **\$1,431,400**, as PI, 07/01/2014 - 06/30/2017

- Berkman Faculty Development Fund - *Sensor-based Assessment of Driver's Interaction Capability for Proactive Information Services in Mobile Context*, **\$10,000**, as PI, no restriction in project period
- National Science Foundation (NSF) – *CPS (Cyber-Physical Systems): Synergy: GOALI: Supporting Mobility Independence for Elderly Drivers Using Semi-Autonomous Vehicular Technologies Enhanced by Human-Centered Situational Awareness*, **\$985,004**, as PI, 09/01/2012 - 08/31/2015

## REFEREED PUBLICATIONS

1. **Kim, S.**, Tasse, D., and Dey, A. K. (2016). Making Machine Learning Applications for Time-Series Sensor Data Graphical and Interactive. To appear in *ACM Transactions on Interactive Intelligent Systems*, Special Issue on Big Personal Data in Interactive Intelligent Systems - **accepted**.
2. **Kim, S.**, and Dey, A. K. (2016). Augmenting Human Senses to Improve the User Experience in Cars: Applying Augmented Reality and Haptics Approaches to Reduce Cognitive Distances. *Multimedia Tools and Applications*, 2016 vol. 75 (16) pp. 9587-9607.
3. Chun, J., **Kim, S.**, and Dey, A.K. (2016). Usability Evaluation of Smart Watch UI/UX using Experience Sampling Method (ESM). *International Journal of Industrial Ergonomics* – **under review**.
4. Chun, J., **Kim, S.**, and Dey, A. K. (2016). Exploring the value of information delivered to drivers. *Advances in Human Aspects of Transportation* (Volume 484 of the series *Advances in Intelligent Systems and Computing*), Chapter 79, pp. 963-977. Cham: Proceedings of the AHFE 2016 Int'l Conf. on Human Factors in Transportation, July 27-31, 2016, Florida, USA.
5. Park, J., **Kim, S.**, and Dey, A. K. (2016). Integrated Driving Aware System in the Real-World: Sensing, Computing and Feedback. In *Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems* (CHI EA '16). ACM, Santa Clara, California, USA, pp. 1591-1597.
6. Kim, M., Kim, K-J., **Kim, S.**, and Dey, A. K. (2016). Evaluation of StarCraft Artificial Intelligence Competition Bots by Experienced Human Players. In *Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems* (CHI EA '16). ACM, Santa Clara, California, USA, pp. 1915-1921.
7. **Kim, S.**, Chun, J., and Dey, A. K. (2015). Sensors Know When to Interrupt You In the Car: Detecting Driver Interruptibility Through Monitoring of Peripheral Interactions. Proc. SIGCHI Conf. Human Factors in Computing Systems (CHI '15). ACM, Seoul, Korea, Apr 2015.
8. Ferreira, H. E., Ferreira, D., **Kim, S.**, Siirtola, P., Rönning, J., Forlizzi, J., and Dey, A. K. (2014). Assessing Real-time Cognitive Load based on Psycho-physiological Measures for Younger and Elder Adults. 2014 IEEE Symp. Computation Intelligence, Orlando, USA (IEEE SSCI '14).
9. **Kim, S.**, Alevan, V., and Dey, A. K. (2014). Understanding Expert-Novice Differences in Geometry Problem-Solving Tasks: A Sensor-based Approach. CHI '14 Extended Abstracts on Human Factors in Computing Systems (CHI EA '14). ACM. Toronto, Canada, Apr – May 2014
10. **Kim, S.**, Hong, J., Li, A. K. Forlizzi, J., and Dey, A. K. (2012). Route Guidance Modality for Elder Driver Navigation. Proc. 10<sup>th</sup> Int'l Conf. Pervasive Computing (Pervasive '12), LNCS 7319, Springer-Verlag, Berlin, Heidelberg, pp. 179-196.
11. **Kim, S.**, Dey, A. K., Lee, J., and Forlizzi, J. (2011). Usability of Car Dashboard Displays for Elder

- Drivers. Proc. SIGCHI Conf. Human Factors in Computing Systems (CHI '11). ACM, pp. 493-502. Vancouver, Canada, May 2011.
12. **Kim, S.**, and Dey, A. K. (2010). AR Interfacing with Prototype 3D Applications Based on User-centered Interactivity. *Journal of Computer-Aided Design*, Special issue on Advanced and emerging virtual and augmented reality technologies in product design, Vol. 42 Issue 5, pp. 373-386, May 2010.
  13. Haapalainen, E., **Kim, S.**, Forlizzi, J., and Dey, A. K. (2010). Psycho-physiological Measures for assessing Cognitive Load. Proc. 12<sup>th</sup> Int'l Conf. Ubiquitous Computing (ACM Ubicomp '10). pp. 301-310. Copenhagen, Denmark, Sept 2010.
  14. **Kim, S.**, and Dey, A.K. (2009). Simulated Augmented Reality Windshield Display as a Cognitive Mapping Aid for Elder Driver Navigation. Proc. SIGCHI Conf. Human Factors in Computing Systems (CHI '09). ACM, pp. 133-142. Boston, USA, Apr 2009.
  15. **Kim, S.**, Mahalik, N. P., Dey, A. K., Ryu, J., and Ahn, B. (2008). Feasibility and Infrastructure Study of AR Interfacing and Intuitive Simulation on 3D Nonlinear Systems. *Computer Standard & Interfaces*, vol. 30 (1-2) Elsevier Science. pp.36-51, Jan 2008.
  16. **Kim, S.**, Cha, J., Kim, J., Ryu, J., Eom, S., Mahalik, N. P., and Ahn, B. (2006). A Novel Test-bed for Immersive and Interactive Broadcasting Production using Augmented Reality and Haptics. *IEICE Trans. on Information and Systems*, Special Section on Artificial Reality and Telexistence, Vol.E89-D No.1 pp. 106-110, Jan 2006.
  17. **Kim, S.**, Kim, H., Eom, S., Mahalik, N. P., and Ahn, B. (2006). A Reliable New 2-Stage Distributed Interactive TGS System based on GIS Database and Augmented Reality. *IEICE Trans. on Information and Systems*, Special Section on Artificial Reality and Telexistence, Vol.E89-D No.1 pp. 98-105, Jan 2006.
  18. Eom, S., **Kim, S.**, Shin, V., and Ahn, B. (2006). Leukocyte Segmentation in Blood Smear Images using Region-based Active Contours. in J.Blanc-Talon et al. (Eds.): *Advanced Concepts for Intelligent Vision Systems 2006*, LNCS 4179, pp. 867-876, Belgium, 2006
  19. Cha, J., Lee, B., Kim, J., **Kim, S.**, and Ryu, J. (2005). Smooth Haptic Interaction in Broadcasted Augmented Reality. *Lecture Notes in Computer Science (LNCS)*, Proc. 10<sup>th</sup> IFIP TC13 Int'l Conf. Human-Computer Interaction (INTERACT 2005), LNCS 3585, pp. 1046-1049, Rome, Italy, Sep 2005.
  20. Cha, J., Ryu, J., **Kim, S.**, and Ahn, B. (2005). A Haptically Enhanced Broadcasting System. First Joint EuroHaptics Conf. and Symp. Haptic Interfaces for Virtual Environment and Teleoperator Systems (worldHAPTICS), pp. 515-516, Pisa, Italy, Mar 2005.
  21. Kim, S., Yun, J., **Kim, S.**, and Ahn, B. (2005). AR over MPEG-2 TS. Proc. 20<sup>th</sup> Int'l Technical Conf. Circuits/System, Computers and Communications (ITC-CSCC2005), vol.1, pp. 287-288, Jeju, Korea, Jul 2005.
  22. Cha, J., Ryu, J., **Kim, S.**, Eom, S., and Ahn, B. (2004). Haptic Interaction in Realistic Multimedia Broadcasting. *Lecture Notes in Computer Science (LNCS)*, Proc. 5th Pacific-Rim Conf. Multimedia (PCM 2004), Part III, LNCS 3333, pp. 482-490, Tokyo, Japan, Nov - Dec 2004.
  23. **Kim, S.**, Eom, S., Byun, S., Yang, S., and Ahn, B. (2004). Traveler Guidance System Based on 3D Street Modeling. 2004 Int'l Conf. Control, Automation and Systems (ICCAS 2004), pp. 1187-1190, Bangkok, Thailand, Aug 2004.
  24. Yun, G, **Kim, S.**, Eom, S., and Ahn, B. (2004). 3D Augmented Reality Map with Fingertip Interaction. Proc. 2004 HCI/VR/CG/DESIGN, pp. 598-604, Korea, Feb 2004.
  25. **Kim, S.**, Lee, S., Jeong, W., and Ahn, B. (2002). PC-based 3D Graphic Spacecraft Simulator using

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