

Sukwon Lee

Ph.D. Student
 School of Industrial Engineering
 Purdue University
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Research Interests

Data Visualization, Visualized Decision Making, Visualization Literacy
 Human Factors, Human Computer Interaction, Cognitive Engineering, User Experience

Education

Ph.D.	Student	School of Industrial Engineering Purdue University West Lafayette, IN, USA <i>Specialty:</i> Human Factors <i>Advisor:</i> Ji Soo Yi	08/2012 – present
M.E.		Industrial Systems Engineering Graduate School of Information Management and Security Korea University Seoul, Republic of Korea <i>Specialty:</i> Human Factors <i>Thesis Title:</i> Predicting Menu Selection in Mobile Phone Using Predictive Statistical Model: Markov Chain Approach <i>Advisor:</i> Rohae Myung	03/2007 – 02/2009
B.E.	major	Department of Industrial Systems and Information Engineering College of Engineering	03/2003 – 02/2007
	minor	Department of Business Administration Business School Korea University Seoul, Republic of Korea	

Work Experience

Graduate Assistant	Data Analytics and Informaiton in Engineering Dean's Office Purdue University	05/2015 – present
Faculty Officer	Department of Weapon Systems and Mechanical Engineering Korea Military Academy 1st Lieutenant of Republic of Korea Army / Full-time Lecturer 2nd Lieutenant of Republic of Korea Army / Lecturer	09/2010 – 03/2012 06/2009 – 09/2010

Research Experience

HIVE Lab. School of Industrial Engineering Purdue University ■ Quantitative Measurement of Intuitiveness of Visualization Techniques – supported by Google Inc. – reference: [J7]	08/2012 – present
Weapon Systems Lab. Department of Weapon Systems and Mechanical Engineering Korea Military Academy	06/2011 – 05/2012

- A Study on Acquisition Methods of Next Generation Mine Detector and Project Strategy
– supported by Defense Acquisition Program Administration of Korea

User Interface Lab.

03/2007 – 08/2010

**Department of Industrial Systems and Information Engineering
Korea University**

- Development of Optimization Technology for Safety Monitoring Systems in the Urban Railway Station
– supported by the Korea Railway Research Institute
– conducted Work Domain Analysis (WDA) and information requirements extraction for Ecological Interface Design (EID)
– reference: [J4]
- Fundamental Studies for Acquisition of Digital Information
– supported by the Ministry of Science and Technology of Korea
– conducted the analysis of information visualization methods and application to improve the computer forensic data analysis
– references: [C4] and [J3]
- Development of Next-generation Vehicle Interface through Ecological Interface Design (EID)
– supported by NGV of Hyundai Motor Group
– conducted Work Domain Analysis (WDA) and information requirements extraction
– designed Ecological Interface Design (EID) for lane change support display and conducted validation of effectiveness of this EID
– references: [C5] and [P1]
- The Mobile Phone's Optimal Vibration Frequency in Mobile Environment
– supported by Samsung Electronics
– conducted empirical test to evaluate perception of vibrotactile stimuli in mobile environment
- Measuring Presence in Mobile 3D
– supported by the Small and Medium Business Administration of Korea
– conducted empirical test for evaluating situation awareness of the subjects who played a 3D game in mobile phone

Publications**Journal Papers**

- [J7] **Sukwon Lee**, Sung-Hee Kim, Ya-Hsin Hung, Heidi Lam, Youn-ah Kang, and Ji Soo Yi (2016). How do People Make Sense of Unfamiliar Visualizations?: A Grounded Model of Novice's Information Visualization Sensemaking. *IEEE Transactions on Visualization and Computer Graphics*
- [J6] Bum Chul Kwon, Sung-Hee Kim, **Sukwon Lee**, Jaegul Choo, Jina Huh, and Ji Soo Yi (2016). VisOHC: Designing Visual Analytics for Online Health Communities. *IEEE Transactions on Visualization and Computer Graphics*
- [J5] Byung Cheol Lee, **Sukwon Lee**, Bum Chul Kwon, and Ji Soo Yi (2015). What are the Causes of Non-compliance Behaviors in Bar Code Medication Administration System Process? *International Journal of Human-Computer Interaction*, 31(4), 227-252.
- [J4] **Sukwon Lee**, Bong Geun Lee, Jiseung Back, Seongsik Jo, and Rohae Myung (2010). Applying Work Domain Analysis for Ecological Interface Design of Safety Monitoring Systems in the Urban Railway Station. *Journal of the Korean Society for Railway*, 13(3), 264-270.
- [J3] Jun-Woo Bae, **Sukwon Lee**, In-Soo Kim, and Rohae Myung (2009). A Research for New Taxonomy of Information Visualization. *Journal of the Society Korea Industrial and Systems Engineering*, 32(2), 76-84.
- [J2] **Sukwon Lee** and Rohae Myung (2009). A Study of Trajectory Mapping Method as a User Interface Design Tool for Mobile Devices. *IE Interfaces*, 22(1), 17-25. ★
- [J1] **Sukwon Lee** and Rohae Myung (2007). Prediction of Mobile Phone Menu Selection with Markov Chains. *Journal of the Korean Institute of Industrial Engineers*, 33(4), 402-409. ★

Conference Papers

- [C6] **Sukwon Lee** and Rohae Myung (2008). A Study of Trajectory Mapping Method as a User Interface Design Tool for Mobile Devices. *2008 Fall Conference of the Korean Institute of Industrial Engineers*. Seoul, Korea.
- [C5] **Sukwon Lee**, Taek Su Nam, and Rohae Myung (2008). Work Domain Analysis for Ecological Interface Design of Vehicle Control Display. *9th WSEAS International Conference on Automation and Information*. Bucharest, Romania.
- [C4] Yoon Seok Jung, **Sukwon Lee**, Byung Don Kong, Seongsik Jo, In-Soo Kim, and Rohae Myung (2008). A Study of Information Visualization for Effective Computer Forensic Investigation. *2008 Spring Conference of Ergonomic Society of Korea*. Daegu, Korea.
- [C3] **Sukwon Lee**, Rohae Myung, and In-Soo Kim (2008). Development of Mobile Phone Menu Structure Based on Visual Concept Map. *2008 Conference of HCI Korea*. Pyeongchang, Gangwon-Do, Korea.
- [C2] **Sukwon Lee** and Rohae Myung (2007). Using Markov Chains for Predicting Mobile Phone Menu Selection in a Adaptive User Interface. *2007 Fall Conference of the Korean Institute of Industrial Engineers*. Seoul, Korea.
- [C1] **Sukwon Lee**, Rohae Myung, and Hong-Chul Lee (2007). Human Behavioral Model in Menu Selection Using Hidden Markov Chain. *INFORMS (Institute for Operations Research and the Management Sciences) International Meeting 2007*. Rio Grande, Puerto Rico.

Working Papers

- [W3] Sung-Hee Kim, **Sukwon Lee**, and Ji Soo Yi (2015). Understanding the Role of Visualizations on Decision Making: A Study on Working Memory.
- [W2] Sung-Hee Kim, **Sukwon Lee**, Min Lee, Jeongjoon Boo, and Ji Soo Yi (2015). Do You Get It? Crowdsourced Workers Visualization Comprehension of Eight Visualizations.
- [W1] **Sukwon Lee**, Sung-Hee Kim, and Niklas Elmqvist (2015). TAHelper: A Visual Analytics Tool for Reading Assignments.

Poster

- [PO2] **Sukwon Lee**, Sung-Hee Kim, Ya-Hsin Hung, Heidi Lam, Youn-ah Kang, and Ji Soo Yi (2015). How do People Make Sense of Unfamiliar Visualization? A Gounded Model of Novice's Information Visualization Sensemaking. *2015 IE GSO Industrial Engineering Research Symposium, Purdue University*. West Lafayette, IN. ★
- [PO1] Sung-Hee Kim, **Sukwon Lee**, Min Lee, Jeongjoon Boo, and Ji Soo Yi (2014). Do You Get It? Crowdsourced Workers Visualization Comprehension of Eight Visualizations. *2014 IE GSO Industrial Engineering Research Symposium, Purdue University*. West Lafayette, IN.

Book

- [B1] Sang Kil Lee, Baek-Ki Jung, Dong-Yoon Chung, Gun-In Kim, Sung Hoon Choi, Hyun Dal Yoon, Wonseok Tae, and **Sukwon Lee** (2011). New Weapon Systems (3rd edition). *Cheong Moon Gak Publisher*. (ISBN: 9788963640846)

Patent

- [PA1] Dong Seok Lee, Rohae Myung, Seung-Kweon Hong, Junghwan Kim, Taek Su Nam, **Sukwon Lee**, and Junchae Lim (2009). Display Method to Support Lane Change. *The Korean Intellectual Property Office*. (Patent No. 10-0882846)

Teaching Experience

School of Industrial Engineering

Purdue University (Graduate Teaching Assistance)

- Data Visualization: Theory and Practice (graduate course)
- Work Analysis and Design II (undergraduate course)

Spring 2015
 Spring 2015, Fall 2014
 Spring 2014, Fall 2013
 Spring 2013, Fall 2012

Department of Weapon Systems and Mechanical Engineering Korea Military Academy (Full-time Lecturer, Lecturer)

■ Introduction to Industrial and Systems Engineering (undergraduate course, 3 credit hours)	Spring 2011, Fall 2010 Spring 2010, Fall 2009
■ Systems Engineering and Analysis (undergraduate course, 3 credit hours)	Fall 2011, Fall 2010
■ Weapon Systems (undergraduate course, 3 credit hours)	Fall 2011, Fall 2010 Spring 2010, Fall 2009

**Department of Industrial Systems and Information Engineering
Korea University (Graduate Teaching Assistance)**

■ Human Factors & Lab II (undergraduate course)	Fall 2008, Fall 2007
■ User Interface Design & Lab (undergraduate course)	Spring 2008, Spring 2007

Activities

Workshop Organizer

■ VisLit Workshop 2014, Towards An Open Visualization Literacy Testing Platform	11/2014
– Co-located with IEEE VIS 2014	
– Co-organizer with Sung-Hee Kim, Jeremy Boy, Niklas Elemqvist, and Ji Soo Yi	

Conference Student Volunteer

■ IEEE VIS 2014, Paris, France	11/2014
■ IEEE VIS 2013, Atlanta, GA, USA	10/2013

Extracurricular Activities

■ President of the Korean Student Association (PKIE: Purdue Korean Industrial Engineers) in School of Industrial Engineering at Purdue University	08/2013 – 07/2014
■ SURF (Summer Undergraduate Research Fellowships) Graduate Mentor	Summer 2013
– Jeongjoon Boo (Undergraduate student, Purdue University)	
■ Field Training at 1st Division of Republic of Korea Army	08/2010
■ Member of Korea University Snowboard Team (FLIP)	03/2003 – 02/2009
– President from 03/2005 to 02/2006	
– Led the team to second-place finish in 2006 University Federation Snowboarding Competition	

Honors and Awards

■ Audience Choice Poster Award	04/2015
– 2015 IE GSO Industrial Engineering Research Symposium Poster Contest, Purdue University	
■ Graduate Student Mentor Award	08/2013
– 2013 Summer SURF (Summer Undergraduate Research Fellowships), Purdue University	
■ Excellence in Education Award	05/2012
– 2011 Academic Board Evaluation, Korea Military Academy	
■ The Second-place Best Paper Award	11/2008
– 4th KIIE Master's Student Research Paper Competition, KIIE (Korean Institute of Industrial Engineers)	
– reference: [J2]	
■ Research Assistant Scholarship	Spring 2008
– Korea University	
■ The First-place Best Paper Award	11/2007
– 3rd KIIE Master's Student Research Paper Competition, KIIE (Korean Institute of Industrial Engineers)	
– reference: [J1]	
■ General Scholarships	Fall 2008, Spring 2008
– Korea University	Fall 2007
■ The Second Stage of Brain Korea 21 (BK21) Scholarship	Spring 2007
– Korea University	
■ Semester High Honors	Fall 2006, Fall 2005
– Korea University	

■ Honors Scholarships	Spring 2006, Spring 2004
– Korea University	
■ Special Scholarships	Fall 2004
– Korea University	
■ Freshmen Special Scholarships	Spring 2003
– Korea University	
