

# Deokgun Park

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## Education

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### University of Maryland

PH. D. IN COMPUTER SCIENCE

- Dissertation: *Visual Analytics Approach for Open-ended Tasks in Text Mining*
- Committee: Niklas Elmqvist (*Advisor*), Hal Daumé III, Bongshin Lee, Jaegul Choo, Hector Bravo Corrada

College Park, MD

2014-2018 (expected)

### Purdue University

M.S. IN INTERDISCIPLINARY ENGINEERING

- Advisor: Niklas Elmqvist

West Lafayette, IN

2012-2014

### Seoul National University

M.S. IN BIOMEDICAL ENGINEERING

- Advisor: Hee Chan Kim

Seoul, South Korea

2000-2002

### Seoul National University

B.S. IN ELECTRICAL ENGINEERING

Seoul, South Korea

1996-2000

## Professional Experience

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### University of Maryland

RESEARCH AND TEACHING ASSISTANT

- Member of the Human-Computer Interaction Lab

College Park, MD

Jul 2014 - Present

### Microsoft Research

RESEARCH INTERN

- Visualization and Interaction for Business and Entertainment (VIBE) Group advised by Steven Drucker
- Developed a declarative grammar for Unit Visualizations

Redmond, WA

Summer 2015

### IBM T.J. Watson Research Center

RESEARCH INTERN

- Watson Cognitive Visualization Group advised by Cody Dunne
- Developed collaborative data exploration system and filed two patents

Cambridge, MA

Summer 2014

### Purdue University

RESEARCH ASSISTANT

- Member of the PivotLab advised by Niklas Elmqvist

West Lafayette, IN

Jan 2013 - May 2014

### TechnoSK

ENGINEER

- Automated the design process for top-down modeling approach
- Resulted in the reduced lead time and man hours for the thermal design for power plant

Seoul, South Korea

Apr 2010 - Jun 2012

### NanoBrick

CO-FOUNDER, RESEARCHER

- Lead new product development using the new color changing nano-material
- Awarded two national research grant of **\$1.1M**

Suwon, South Korea

Nov 2007 - Mar 2010

### Electronics and Telecommunications Research Institute (ETRI)

RESEARCHER

- Invented touch based context aware service using human body communication
- Licensed multiple patents to Samsung Electronics with **\$2M**

Daejeon, South Korea

Mar 2003 - Nov 2007

# Teaching Experience

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## Teaching Assistant

INTRODUCTION TO HCI (CMSC434, COMPUTER SCIENCE)

University of Maryland

Fall 2017

## Instructor

INTRODUCTION TO DATA VISUALIZATION (INST462, ISCHOOL)

University of Maryland

Spring 2018 (Expected)

# Publications

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## Journal Papers (peer-reviewed)

- J1 **Park, Deokgun**, Steven Drucker, Roland Fernandez, and Niklas Elmqvist. Atom: : A grammar for unit visualizations. *IEEE transactions on visualization and computer graphics (TVCG)*, (accepted with minor revision)
- J2 **Park, Deokgun**, Seungyeon Kim, Jurim Lee, Jaegul Choo, Nicholas Diakopoulos, and Niklas Elmqvist. Conceptvector: Text visual analytics via interactive lexicon building using word. *IEEE transactions on visualization and computer graphics (TVCG)*, PP(99):1–1, 2017
- J3 Minjeong Kim, Kyeongpil Kang, **Park, Deokgun**, Jaegul Choo, and Niklas Elmqvist. Topiclens: Efficient multi-level visual topic exploration of large-scale document collections. *IEEE transactions on visualization and computer graphics (TVCG)*, (Proc. VAST 2016), 23(1):151–160, 2017
- J4 Jungu Choi, **Park, Deok Gun**, Yuet Ling Wong, Eli Fisher, and Niklas Elmqvist. Visdock: A toolkit for cross-cutting interactions in visualization. *IEEE transactions on visualization and computer graphics (TVCG)*, 21(9):1087–1100, 2015
- J5 **Park, Deokgun** and Hee Chan Kim. Comparative study of telecommunication methods for emergency telemedicine. *Journal of telemedicine and telecare*, 9(5):300–303, 2003
- J6 Yoon Seok Yang, **Park, Deokgun**, Hee Chan Kim, Min-Ho Choi, and Jong-Yil Chai. Automatic identification of human helminth eggs on microscopic fecal specimens using digital image processing and an artificial neural network. *IEEE Transactions on Biomedical Engineering*, 48(6):718–730, 2001

## Conference Papers (peer-reviewed)

- C1 **Park, Deokgun**, Simranjit Sachar, Nicholas Diakopoulos, and Niklas Elmqvist. Supporting comment moderators in identifying high quality online news comments. In *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (CHI)*, pages 1114–1125. ACM, 2016, **Best Paper Honorable Mention Award**
- C2 **Park, Deokgun**, Jungu Choi, and Niklas Elmqvist. Parallelspace: Simultaneous exploration of feature and data for hypothesis generation. In *System Sciences (HICSS), 2016 49th Hawaii International Conference on*, pages 1437–1445. IEEE, 2016
- C3 Zhenpeng Zhao, Sriram Karthik Badam, Senthil Chandrasegaran, **Park, Deok Gun**, Niklas LE Elmqvist, Lorraine Kisselburgh, and Karthik Ramani. skwiki: a multimedia sketching system for collaborative creativity. In *Proceedings of the 32nd annual ACM conference on Human factors in computing systems (CHI)*, pages 1235–1244. ACM, 2014
- C4 **Park, Deokgun**, Jin Kyung Kim, Jin Bong Sung, Jung Hwan Hwang, Chang Hee Hyung, and Sung Weon Kang. Tap: touch-and-play. In *Proceedings of the SIGCHI conference on Human Factors in computing systems (CHI)*, pages 677–680. ACM, 2006
- C5 **Park, Deokgun**, Jin Kyung Kim, Sung Jin Bong, Jung Hwan Hwang, Chang Hee Hyung, and Sung Weon Kang. Context aware service using intra-body communication. In *Pervasive Computing and Communications, 2006. PerCom 2006. Fourth Annual IEEE International Conference on*, pages 8–pp. IEEE, 2006
- C6 **Park, Deokgun**, Seung Chul Shin, Sung Won Kang, and Youn Tae Kim. Development of flexible self adhesive patch for professional heat stress monitoring service. In *Engineering in Medicine and Biology Society, 2005. IEEE-EMBS 2005. 27th Annual International Conference of the*, pages 3789–3792. IEEE, 2006
- C7 **Park, Deokgun** and Sung Weon Kang. Development of reusable and expandable communication for wearable medical sensor network. In *Engineering in Medicine and Biology Society, 2004. IEMBS'04. 26th Annual International Conference of the IEEE*, volume 2, pages 5380–5383. IEEE, 2004
- C8 Seung-Chul Shin, CY Ryu, JH Kang, SH Nam, YS Song, TG Lim, JW Lee, **Park, Deokgun**, SH Kim, and YT Kim. Realization of an e-health system to perceive emergency situations. In *Engineering in Medicine and Biology Society, 2004. IEMBS'04. 26th Annual International Conference of the IEEE*, volume 2, pages 3309–3312. IEEE, 2004

## Workshop Papers

- W1 **Park, Deokgun**, Niklas Elmquist, and Lorraine Kisselburgh. Vistwit: Talking together about news visualization with twitter. In *Mobile and BreakingNews: New Challenges for News Information Visualizations at IEEE VIS 2013*

## Posters

- P1 Jung Hwan Hwang, Jin Bong Sung, Chang Hee Hyoung, Jin Kyung Kim, **Park, Deokgun**, and Sung Weon Kang. Analysis of signal interference in human body communication using human body as transmission medium. In *Antennas and Propagation Society International Symposium 2006, IEEE*, pages 495–498. IEEE, 2006
- P2 Jung Hwan Hwang, Chang Hee Hyoung, Jin Bong Sung, Jin Kyung Kim, **Park, Deokgun**, and Sung Weon Kang. Em simulation and analysis on the ground electrode of human body communication. In *Microwave Conference, 2006. 36th European*, pages 1122–1123. IEEE, 2006
- P3 Chang Hee Hyoung, Jin Bong Sung, Jung Hwan Hwang, Jin Kyung Kim, **Park, Deokgun**, and Sung Weon Kang. A novel system for intrabody communication: touch-and-play. In *Circuits and Systems, 2006. ISCAS 2006. Proceedings. 2006 IEEE International Symposium on*, pages 4–pp. IEEE, 2006
- P4 Jin Bong Sung, Jung Hwan Hwang, Chang Hee Hyoung, Jin Kyung Kim, **Park, Deokgun**, and Sung Weon Kang. Effects of ground electrode on signal transmission of human body communication using human body as transmission medium. In *Antennas and Propagation Society International Symposium 2006, IEEE*, pages 491–494. IEEE, 2006
- P5 Youn Tae Kim, **Park, Deokgun**, Jaemin Kang, and Kwang Seok Seo. Development of patch type sensor module for real-time monitoring of heart rate and agility index. In *Sensors, 2008 IEEE*, pages 1151–1154. IEEE, 2008
- P6 **Park, Deokgun**, Yoon Seok Yang, Hee Chan Kim, Min-Ho Choi, and Jong-Yil Chai. Detecting parasitic eggs automatically using artificial neural net. In *LabAutomation. Association for Laboratory Automation (ALA), 2002, (Best Poster Award)*

## Patents

### ORDERED BY CITATION

- A1 Duck Gun Park, Sung Weon Kang, and Chang Auck Choi. Communication apparatus and method using human body as medium, January 30 2007. US Patent 7,171,177
- A2 Duck-Gun Park, Sung-Weon Kang, Jin-kyung Kim, Chang-hee Hyoung, Jin-Bong Sung, and Jung-Hwan Hwang. Human body communication device, human body communication system and method using the same, November 22 2005. US Patent App. 11/284,749
- A3 Ki-Hyuk Park, In-Gi Lim, Sung-Weon Kang, Hyung-Il Park, Chang-hee Hyoung, Jung-Hwan Hwang, Jin-kyung Kim, Duck-Gun Park, Tae-Wook Kang, Sung-Eun Kim, et al. Human body communication system and communication method thereof, June 18 2013. US Patent 8,467,431
- A4 Hyung Il Park, In Gi Lim, Tae Wook Kang, Sung Weon Kang, Kyung Soo Kim, Jung Bum Kim, Chang Hee Hyoung, Jung Hwan Hwang, Jin Kyung Kim, Sung Eun Kim, et al. Apparatus for frequency modulating and demodulating of frequency selective baseband with gain of frequency diversity, and apparatus for transmitting and receiving using for this, April 29 2008. US Patent App. 12/667,385
- A5 Duck-Gun Park, Young Tae Kim, Sung Weon Kang, and Seung Chul Shin. Portable data transmitting device, and system and method for managing heat stress using the same, February 28 2006. US Patent App. 12/096,371
- A6 Duck-Gun Park and Youn-Tae Kim. System for managing physical training and method thereof, January 29 2013. US Patent 8,360,785
- A7 Duck-Gun Park, Sung-Weon Kang, Chang-hee Hyoung, Jin-Bong Sung, Jung-Hwan Hwang, and Jin-kyung Kim. Method and apparatus for providing touch and play (tap)—based service and system using the method and apparatus, April 24 2012. US Patent 8,165,522
- A8 Hyung Il Park, In Gi Lim, Tae Wook Kang, Sung Weon Kang, Kyung Soo Kim, Jung Bum Kim, Chang Hee Hyoung, Jung Hwan Hwang, Jin Kyung Kim, Sung Eun Kim, et al. Frequency modulating apparatus and transmitting apparatus including the same, and frequency demodulating apparatus and receiving apparatus including the same, June 24 2014. US Patent 8,761,231
- A9 Duck-Gun Park, Sung-Weon Kang, Chang-hee Hyoung, Jin-Bong Sung, Jung-Hwan Hwang, Sung-Eun Kim, Jin-kyung Kim, In-Gi Lim, Hyung-Il Park, Jung-Bum Kim, et al. Apparatus and method for providing media advertisement service using human body communication, December 5 2007. US Patent App. 12/518,091

## Invited Talks

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- *ConceptVector: Text Visual Analytics via Interactive Lexicon Building using Word Embedding*. Food and Drug Administration (FDA)(host: Vaishali Popat), Silver Spring, MD (July 19, 2017)

## Honors and Awards

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2016	Honorable Mention for Best Paper. ACM Conference on Human Factors in Computing Systems (CHI), awarded for “Supporting Comment Moderators in Identifying High Quality Online News Comments”
2015	Fellowship for IEEE VIS Doctoral Colloquium
2015	1st Place award, Codeathon at American Public Health Association (\$2,500 team prize)
2015	Best use of Harman Technology at AT&T Mobile App Hackathon, Boston
2014	3 awards from Codeathon at American Public Health Association (\$12,000 team prize)
2013	2nd Place award at Schurz Innovation Challenge at Purdue University (\$3,500 prize)
2012	Finalist at Lockheed Martin Innovate the Future Challenge (15 from 500 ideas submitted)
2012	Postech Fellowship for 2 years tuition and stipend
2007	Best Tech Transfer Award and Best Patent Award received as a team
2002	Best Poster Award at LabAutomation 2002 (Palm Springs, CA. \$1,000 prize)
2001	2nd award in a Student Paper Competition in Korean Society of Biomedical Engineering conference

## Academic Service

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### WORKSHOP ORGANIZER

2017 IEEE VIS 2017 Visual Analytics for Deep Learning (VADL) Workshop

### STUDENT ORGANIZER

2016-2017 HCIL Brown Bag Lunch Seminar Series

### REVIEWER

2018 CHI, CG&A

2017 CHI

## Open Source Software

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### Gatherplot

GATHERPLOT.FIREBASEAPP.COM

- An extension of Scatterplot for Multidimensional data

### Conceptvector

CONCEPTVECTOR.ORG

- A lexicon-based interactive text analysis

### Unit Visualization Grammar

INTUINNO.GITHUB.IO/UNIT

- A declarative grammar for unit visualizations

### CommentIQ

COMMENTIQ.FIREBASEAPP.COM

- Comments Moderation tool for Online news sites

### MovieVis

MOVIEVIS-REV2.HEROKUAPP.COM

- A Visual Analytics software for market data

## References

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Available Upon Request