

Sundong Kim

Ph.D. Candidate in Data Mining Lab
Graduate School of Knowledge Service Engineering
Department of Industrial & Systems Engineering
Korea Advanced Institute of Science and Technology (KAIST)
291 Daehak-ro, Yuseung-gu, Daejeon 34141, Republic of Korea
✉ sundong.kim@kaist.ac.kr ☎ +82-10-2999-1962 🏠 <http://seondong.github.io/>

CAREER OBJECTIVES

Data Scientist, Computational Social Scientist

- Seeking a position to find insights from large-scale data
- Seeking an opportunity to participate in data science teams in top-tier companies with data engineers and AI specialists
- Areas of interest: Data from Human-beings, Predictive Analytics, Artificial Intelligence, Optimization

Engineering Team Manager

- Having strength at communicating with teammates, bridging between different groups
- Having strength at understanding things quickly and ability to organize clearly
- Willing to work as a communicator in a group with cross-functional individuals

RESEARCH INTERESTS

- Explaining unknown human behaviors by modeling and analyzing corresponding data (e.g., finding relations between customer revisit and their motion pattern)
- Provide core algorithms on smart services which gives benefits to customers (e.g., smarter friend recommendation algorithm for SNS)

EDUCATION

KAIST, Daejeon, Republic of Korea

- Ph.D. in Graduate School of Knowledge Service Engineering Mar 2015 – Jun 2019 (Expected)
 - Thesis: Discovering Customer's Revisit Pattern
 - Adviser: Prof. Jae-Gil Lee
 - Focus: Predictive Analytics, Mobility data, Revisit prediction
- M.S. in Industrial & Systems Engineering Mar 2013 – Feb 2015
 - Thesis: Maximizing Influence over a Target User through Friend Recommendation
 - Adviser: Prof. Kyoung-Kuk Kim, co-advised by Prof. Jae-Gil Lee
- B.S. in Industrial & Systems Engineering Feb 2008 – Feb 2013
 - Exchange Student in TU Berlin (2012 Spring)
 - Exchange Student in National University of Singapore (2010 Fall)
 - Graduated with *Cum Laude*

WORK EXPERIENCE

KAIST, Daejeon, Republic of Korea

- Project Manager in Revisit Prediction Project Feb 2017 – Present
 - Developed revisit prediction model from in-store fingerprinted mobility data
 - Funded by Microsoft Research Lab Asia
 - Visited two start-up companies ZOYI and Loplat to get data for my research
 - Provided corresponding datasets and offspring projects to master students
 - Advised by Prof. Jae-Gil Lee
- Independent Researcher in Active Friend Recommendation Research May 2014 – 20150401
 - Interested in solving asymmetric relationship between people
 - Suggested a new friend recommendation technique with a target user to reduce such a phenomenon
 - Defined two metrics: influence and resistance from SNS and approximated by MCMC
 - Wrote as a master's thesis and presented in ICDE 2015 Ph.D. Symposium
- Project Manager in Exobrain WiseKB Project Aug 2013 – Feb 2017
 - Developed type and domain inference software for knowledge-base (KB) boosting
 - Fine-grained type of the instance is deduced, when triples are entered into the KB
 - Advised by Prof. Jae-Gil Lee, worked with Prof. Key-Sun Choi and Saltlux
- Undergraduate Summer Intern in Mobile Harbor Project Jun 2010 – Aug 2010
 - Studied queueing theory and discrete event modeling of mobile harbor
 - Advised by Prof. James Morrison

Deloitte Consulting, Seoul, Republic of Korea

- Intern in Technology Integration group Aug 2012 – Nov 2012
 - Helped to renew pricing structure in securities consulting for AhnLab
 - Advised by Youngjin Kang

PUBLICATIONS

INTERNATIONAL CONFERENCES

- [1] S. Kim, “Friend Recommendation with a Target User in Social Networking Services,” in ICDE 2015. (*Ph.D. Symposium*)

DOMESTIC CONFERENCES

- [2] M. Choy, M. Kang, M. Kim and S. Kim, “Exploiting Change Patterns of the Past Context Data on Human Interruptibility Prediction,” in KCC 2017. (*Best Paper Award*)
- [3] S. Kim and J. Lee, “Predicting Customer’s Revisit Intention Using Indoor Movements in Stores by Wi-Fi Monitoring,” in KCC 2016.
- [4] M. Kang, J. Kim, S. Kim and J. Lee, “Building a Schema of the Korean DBpedia Ontology,” in HCLT 2014.
- [5] S. Kim, M. Kang and J. Lee, “A Method of Automatic Schema Evolution on DBpedia Korea,” in KIPS 2014.

UNDER REVIEW / WORKING PAPERS

- [1] S. Kim and J. Lee, “Utilizing In-Store Sensors for Revisit Prediction,” submitted in KDD 2018.
- [2] S. Kim and J. Lee, “Predictability of Customer Revisit,” working paper.
- [3] S. Kim and J. Lee, “Exploring Revisit from Customers’ Point-of-Interests,” working paper.
- [4] S. Kim, J. Ryu and J. Jang, “Maintaining Wi-Fi Fingerprinted Point-of-Interests,” working paper.

AWARDS & SCHOLARSHIPS

- Best Presentation Award, Bi-Annual KSE Student Colloquium, KAIST Dec 2017
- National Scholarship for Graduate Studies, Korea Student Aid Foundation 2013 – Present
- Excellent Academic Achievement Scholarship, KAIST IsysE 2009 – 2012
- National Science & Technology Scholarship, Korea Student Aid Foundation 2008 – 2013

SELECTED TALKS

- Predicting Customers’ Revisit Intention for Offline Stores by Indoor Mobility, KAIST Dec 2017
- Predicting Customers’ Revisit Intention for Offline Stores by Indoor Mobility, ZOYI Nov 2017
- Predicting Customers’ Revisit Intention for Offline Stores by Indoor Mobility, Loplat Nov 2017

SELECTED COURSEWORK

- In Graduate School of Knowledge Service Engineering, KAIST:
 - Data Mining and Knowledge Discovery (KSE525), Social Network Analysis (KSE625), Large-Scale Data Mining (KSE526), Human Computer Interaction (KSE531), Mobile Pervasive Computing (KSE624), Business Intelligence (KSE521)
- In Department of Industrial & Systems Engineering, KAIST:
 - Agent-based modeling (IE472) Queueing Theory (IE633), Stochastic Modeling I & II (IE632, IE671), Supply Chain Management, Engineering Statistics I & II, Operations Research I & II, Production Management I & II, Financial Engineering
- Others:
 - Machine Learning (CS570), Mathematical Analysis, Linear Algebra, Networks in Economics and Finance (In TUB)

TEACHING ASSISTANT

- Global TA in iPodia Alliance Mar 2013 – Dec 2017
 - Course name: Principals and practices of global innovation, led by Prof. Stephen Lu in USC
 - Over 500 students from 8 global universities took the class
 - Participated 5 semesters to help interactions between global students, set up the classroom, and graded
 - Managed 2-week travel to USC and 2-week visits of 100+ students
 - Locally worked with Prof. James Morrison and KAIST CELT, globally with many instructors and TAs
- Grading TA in KSE department
 - KSE525: Data Mining and Knowledge Discovery – Graduate level course with DTU Spring 2017
 - KSE625: Data Mining for Social Networks – Graduate level course with DTU Fall 2017
- Teaching Assistant of GMU Research Camp Jun 2012 – Aug 2014
 - Research camp for ingenious students from Seoul Science High School
 - Help student’s interaction with visiting professors from the U.S.

- Supported student's computational physics research project
- Organized and participated travel with visiting professors
- 1 time of 3-week camp, 3 times of 1-week camp

MENTORING & TUTORING

- Mentor for Undergraduates, KAIST Mentoring Program Mar 2013 – Dec 2017
 - Listened to their concerns and helped them go through their school lives well
 - Semester-long program, I spent 15-20 hours/semester with each mentee
 - Mentees: T. Kim (Spring 2013), D. Kim (Spring 2016), Y. Jo (Spring 2017), C. Ryu (Fall 2017)
- Tutor for Undergraduates, KAIST Tutoring Program
 - IE332: Operations Research II, Tutees: S. Kim, H. Song Fall 2015
 - IE332: Operations Research II, Tutees: W. Doo, N. Park Fall 2014
 - IE101: Introduction to Operations Research, Tutees: M. A. Dossari, A. Ansi Spring 2013
 - MAS101: Calculus I, Tutees: M. A. Dossari, A. Ansi Spring 2013
- Tutoring Outside KAIST (Selected)
 - High School Math I, Tutees: Dunsan Girl's high school students, KAIST Midam Scholarship program Spring 2012
 - High School Math II, Tutee: W. Kim(Former Hansung Science High School student, entered KAIST) Jan 2012
 - 8th grade Math, Tutee: B. Lim(Former ISS International School student, entered U.Toronto), Singapore Fall 2010
 - 8th grade Math, Tutee: T. Park(Former Overseer Family School student, entered Solbridge), Singapore Fall 2010

OTHERS

- Group Leader in Data Mining Lab, User Modeling Group Jan 2018 – Present
 - Led official lab seminar, practiced 3 min, 15 min presentation with recent publications
 - Helped to make atmosphere with active discussion and managed group members' timeline together
 - Group members: M. Choy, S. Kim (Graduated), M. Kim, H. Kim, Y. Song, Y. Shin
- Top-10 for Kaggle Competition (WSDM 2018 Cup, Churn prediction) Dec 2017
 - Met J. Ryu online, teamed up, and stayed through it, unofficial record due to multiple submissions
 - Generated handcrafted features from the transaction and log data to predict customer's churn behavior
- 2015 Imperial-KAIST Summer School Jul 2015
- External Reviewer, ICWSM 2015

LANGUAGES

- Korean: ILR Level 5 – Native
- English: ILR Level 4 – Full Professional Proficiency
- Chinese and German: ILR Level 0 – No Proficiency

SKILLS

- Python (numpy, pandas, scipy, sklearn, matplotlib etc), \LaTeX – Confident
- Deep Learning library (Keras and PyTorch), Java – Proficient
- R, SQL, Matlab – Intermediate
- Android, Arduino, Web programming, Scala, Spark, Hadoop – Have done in team projects

[Last updated on 2018-03-12]