# Sundong Kim

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## CAREER OBJECTIVES

**Research Scientist, Data 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)
  - Proposed Thesis: Revisit Prediction Using Customer Mobility Data
  - 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

**Microsoft Research Lab Asia**, Beijing, China

- Research Intern in Social Computing Group (Confirmed) — Sep 2018 – Nov 2018
  - Accepted as a research intern for MSRA Korea Internship Program.
  - Planning to visit MSRA on Fall 2018 for three month internship program
  - Research Mentor: Dr. Xing Xie

**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 – Apr 2015
  - 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 and J. Lee, "Utilizing In-Store Sensors for Revisit Prediction," to appear in ICDM 2018. *(Full Paper - Acceptance rate: 8.86%)*

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

**DOMESTIC CONFERENCES**

[3] 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)*

[4] S. Kim and J. Lee, "Predicting Customer's Revisit Intention Using Indoor Movements in Stores by Wi-Fi Monitoring," in KCC 2016.

[5] M. Kang, J. Kim, S. Kim and J. Lee, "Building a Schema of the Korean DBpedia Ontology," in HCLT 2014.

[6] 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, "Deep Survival Analysis for Revisit Prediction," working paper.

[2] H.Song, S. Kim, and J. Lee, "Smart Batch Selection for Deep Learning," 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 Oversee 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, IEEE Access 2018

**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
- Tensorflow, Java, R, SQL, Matlab – Intermediate
- Android, Arduino, Web programming, Scala, Spark, Hadoop – Have done

[*Last updated on 2018-08-19* ]