

Sundong Kim

Research Fellow in Data Science Group, Institute for Basic Science (IBS)
B233 (Theory), 55 Expo-ro, Yuseong-gu, Daejeon 34126, Republic of Korea,
✉ sundong@ibs.re.kr 🏠 <http://seondong.github.io/> ☎ +82-10-2999-1962

RESEARCH INTERESTS

Applied Data Mining, Computational Science

- Explaining and predicting unknown behaviors or phenomena by modeling and analyzing data
- Developing effective algorithms to give benefits to users and clients

EDUCATION

- Ph.D. in Knowledge Service Engineering, KAIST (Advisor: Jae-Gil Lee) 2015 – 2019
- Thesis: Customer Revisit Prediction Using In-Store Sensor Data
- M.S. in Industrial & Systems Engineering, KAIST (Advisor: Kyoung-Kuk Kim) 2013 – 2015
- Thesis: Maximizing Influence over a Target User through Friend Recommendation
- B.S. in Industrial & Systems Engineering, KAIST 2008 – 2013
- Exchange Student in TU Berlin (Spring 2012)
 - Exchange Student in National University of Singapore (Fall 2010)

WORK EXPERIENCE

- Research Fellow – Institute for Basic Science (IBS), Data Science Group** Sep 2019 – Current
- Working on predictive analytics and computational social science projects
 - Chief Investigator: Meeyoung Cha
- Intern – Microsoft Research Lab Asia Fall 2018
- Worked on user embedding model using search queries and behavior data [7]
 - Mentor: Xing Xie
- Intern – Deloitte Consulting Fall 2012
- Helped to renew pricing structure for IT security company

RESEARCH EXPERIENCE

- Customer Revisit Prediction 2017 – 2019
 - Went through all processes, from negotiation to collaboration with ZOYI and Loplat.
 - Developed feature-engineered, deep survival analysis model for revisit prediction [1, 2, 4, 6]
- Entity Typing for Knowledge Base Enriching 2013 – 2016
 - Developed entity typing algorithms as a part of WiseKB project [5]
 - Deployed the software for Exobrain AI, which won the Korean quiz show in 2016.
- Active Friend Recommendation for SNS 2014 – 2015
 - Interested in solving asymmetric relationship between people
 - Suggested a friend recommendation algorithm to reduce such a phenomenon [3]

AWARDS & SCHOLARSHIPS

- **Best Paper Candidate, IEEE ICDM 2018** 2018
- Outstanding Research Award, KSE, KAIST 2018
- Appreciation Award, Korean Institute of Information Scientist and Engineers 2018
- Star of Tomorrow Award, Microsoft Research Asia 2018
- Two Best Presentation Awards, Bi-Annual KSE Student Colloquium, KAIST 2017, 2018
- National Scholarship for Graduate Studies, Korea Student Aid Foundation 2013 – 2019
- Excellent Academic Achievement Scholarship, KAIST IsysE 2009 – 2012

PUBLICATIONS**INTERNATIONAL CONFERENCES / JOURNALS**

- [1] S. Kim and J. Lee, “A Systematic Framework of Predicting Customer Revisit with In-Store Sensors,” **Knowledge and Information Systems**
- [2] S. Kim and J. Lee, “Utilizing In-Store Sensors for Revisit Prediction,” **ICDM 2018 (Full Paper - Acceptance rate: 8.86%)**
Selected as One of the Best Papers, Invited to KAIS Journal.
- [3] S. Kim, “Friend Recommendation with a Target User in Social Networking Services,” **ICDEW 2015 (Ph.D. Symposium).**

DOMESTIC CONFERENCES (SELECTED)

- [4] S. Kim and J. Lee, “Predicting Customer’s Revisit Intention Using Indoor Movements in Stores by Wi-Fi Monitoring,” in KCC 2016.
- [5] S. Kim, M. Kang and J. Lee, “A Method of Automatic Schema Evolution on DBpedia Korea,” in KIPS 2014.

UNDER REVIEW / WORKING PAPERS

- [6] “Deep Survival Analysis for Revisit Prediction,” submitted (first author).
- [7] “Neural User Embedding based on User Behavior Data,” submitted.
- [8] “Accelerating the DNN Training via Adaptive Boundary Batch Selection,” submitted.
- [9] “Looking Uncertain Samples for Fast and Accurate DNNs Training,” submitted.
- [10] “Joint Learning for Overall and Aspects Sentiment Prediction,” submitted.

LEADERSHIP

- **In Viterbi iPodia Program** 2013 – 2017
 - Participated five semesters as a TA to help manage a course between seven universities
 - Promote offline and online interactions, set up the classroom, grade assignments
 - Managed a two week travel to USC and a two week visit of 100+ students
 - Worked with James Morrison and Stephen Lu, and many instructors throughout the campuses
- **In Data Mining Lab, KAIST** 2017–2019
 - Initiated to make an atmosphere with active discussion and collaboration among lab members
 - Led official lab seminar, practiced 15 min presentation with recent publications
 - Helped shaping several master’s and undergraduate’s research
- **In Microsoft Research Asia** 2018–2019
 - Played the role of leader for outbound interns from Korea
 - Responsible for documentation and liaison to help friends settle down in new atmosphere
 - Keep organizing occasional meet-ups to foster long-term friendship and to share their research
- **In WSDM 2018 Cup** 2017
 - Met J. Ryu online, teamed up, and stayed through it, achieved unofficial top-10
 - Since then, we worked together on subsequent research project.
- **In KAIST Mentoring Program** 2013 – 2017
 - Semester-long program, I spent 15-20 hours/semester with each undergraduate mentee
 - Listened to their concerns and helped them go through their school life well
 - Mentees: T. Kim (Spring 2013), D. Kim (Spring 2016), Y. Jo (Spring 2017), C. Ryu (Fall 2017)

LANGUAGES

- Korean: ILR Level 5 – Native
- English: ILR Level 4 – Full Professional Proficiency
- Chinese: ILR Level 1 – Elementary Proficiency

SKILLS & OTHERS

- Efficient problem solver skilled in Python, data mining, deep learning, statistics and \LaTeX
- Innate explorer, having leading and mediating skills
- Proven listener and facilitator
- Journal & Conference reviewer: IEEE TKDE, ACM TIST, DKE, PMC, IEEE TCSS, IEEE Access, ICWSM, PAKDD

[Last updated on 2019-09-12]