

Kijung SHIN

CONTACT INFORMATION	School of Electrical Engineering, KAIST 291 Daehak-ro, Yuseong-gu Daejeon 34141, Republic of Korea	Homepage: https://kijungs.github.io Email: kijungs@kaist.ac.kr
RESEARCH INTERESTS	Data Mining, Graph Mining, Social Network Analysis, Scalable Machine Learning	
EDUCATION	Carnegie Mellon University , Pittsburgh, PA, USA Ph.D. in Computer Science Thesis: “Mining Large Dynamic Graphs and Tensors” Advisor: Prof. Christos Faloutsos Seoul National University , Seoul, Korea B.S. in Computer Science & Engineering; and B.A. in Economics Thesis: “Scalable Methods for Random Walk with Restart and Tensor Factorization” Advisors: Prof. U Kang and Prof. Byung-Gon Chun GPA: 4.21/4.30 (Ranked 1st in the College of Engineering)	08/2015 - 02/2019 03/2008 - 08/2015
POSITIONS	KAIST , Daejeon, Korea Assistant Professor, School of Electrical Engineering (Computer Division) LinkedIn Corporation , Mountain View, CA, USA Research Intern, Growth Relevance Team Project: “Lossless and Lossy Summarization of Web-Scale Graphs” Mentors: Dr. Amol Ghoting and Dr. Myunghwan Kim LinkedIn Corporation , Mountain View, CA, USA Research Intern, Growth Relevance Team Project: “Discovering Progression Stages in Trillion-Scale Behavior Logs” Mentors: Dr. Mahdi Shafiei and Dr. Myunghwan Kim CYRAM , Seoul, Korea Associate Researcher Projects: NetMiner 4 (social network analysis software), NetExplorer 3 (criminal analysis software), and Sopion.com (Twitter analysis and monitoring service)	02/2019 - Present 05/2018 - 08/2018 05/2017 - 08/2017 01/2011 - 12/2013
AWARDS & HONORS	Awarded the Siebel Scholar Fellowship Selected for Best Papers of ICDM 2016 and Invited to the KAIS Journal Received the SIGKDD Best Research Paper Award Awarded the Korea Foundation for Advanced Studies Scholarship Received the Best Senior Thesis Award , Seoul National University Received the Samsung Humantech Paper Award (1st in CS) Awarded the Kwanjeong Educational Foundation Scholarship Awarded the Merit-Based Scholarship , Seoul National University Awarded the National Science & Technology Scholarship	08/2018 12/2016 08/2016 2015 - 2019 08/2015 02/2015 2010, 2014, 2015 2009 2008
THESES	<p>[1] Mining Large Dynamic Graphs and Tensors <u>Kijung Shin</u> Ph.D. Thesis, Carnegie Mellon University, 2019.</p> <p>[2] Scalable Methods for Random Walk with Restart and Tensor Factorization <u>Kijung Shin</u> Senior Thesis, Seoul National University, 2015. (<i>Best Senior Thesis Award</i>)</p>	

- [3] SWeG: Lossless and Lossy Summarization of Web-Scale Graphs
Kijung Shin, Amol Ghoting, Myunghwan Kim and Hema Raghavan
TheWebConf 2019 (formerly WWW)
- [4] SMF: Drift Aware Matrix Factorization with Seasonal Patterns
Bryan Hooi, Kijung Shin, Shenghua Liu, and Christos Faloutsos
SDM 2019
- [5] Think Before You Discard: Accurate Triangle Counting in Graph Streams with Deletions
Kijung Shin, Jisu Kim, Bryan Hooi, and Christos Faloutsos
PKDD 2018
- [6] ONE-M: Modeling the Co-evolution of Opinions and Network Connections
Aastha Nigam, Kijung Shin, Ashwin Bahulkar, Bryan Hooi, David Hachen, Boleslaw Szymanski, Christos Faloutsos, and Nitesh Chawla
PKDD 2018
- [7] Discovering Progression Stages in Trillion-Scale Behavior Logs
Kijung Shin, Mahdi Shafiei, Myunghwan Kim, Aastha Jain, and Hema Raghavan
TheWebConf 2018 (formerly WWW) (Industry Track)
- [8] Tri-Fly: Distributed Estimation of Global and Local Triangle Counts in Graph Streams
Kijung Shin, Mohammad Hammoud, Euiwoong Lee, Jinoh Oh, and Christos Faloutsos
PAKDD 2018
- [9] WRS: Waiting Room Sampling for Accurate Triangle Counting in Real Graph Streams
Kijung Shin
ICDM 2017
- [10] ZooRank: Ranking Suspicious Entities in Time-Evolving Tensors
Hemank Lamba, Bryan Hooi, Kijung Shin, Christos Faloutsos, and Jürgen Pfeffer
PKDD 2017
- [11] DenseAlert: Incremental Dense-Subtensor Detection in Tensor Streams
Kijung Shin, Bryan Hooi, Jisu Kim, and Christos Faloutsos
KDD 2017
- [12] Why You Should Charge Your Friends for Borrowing Your Stuff
Kijung Shin, Euiwoong Lee, Dhivya Eswaran, and Ariel D. Procaccia
IJCAI 2017 (*Featured in New Scientist*)
- [13] D-Cube: Dense-Block Detection in Terabyte-Scale Tensors
Kijung Shin, Bryan Hooi, Jisu Kim, and Christos Faloutsos
WSDM 2017 (*SIGIR Student Travel Grant*)
- [14] S-HOT: Scalable High-Order Tucker Decomposition
Jinoh Oh, Kijung Shin, Evangelos E. Papalexakis, Christos Faloutsos, and Hwanjo Yu
WSDM 2017
- [15] CoreScope: Graph Mining Using k-Core Analysis - Patterns, Anomalies and Algorithms
Kijung Shin, Tina Eliassi-Rad, and Christos Faloutsos
ICDM 2016 (*Selected for Best Papers of ICDM 2016 and Invited to the KAIS Journal*)
- [16] M-Zoom: Fast Dense-Block Detection in Tensors with Quality Guarantees
Kijung Shin, Bryan Hooi, and Christos Faloutsos
PKDD 2016
- [17] FRAUDAR: Bounding Graph Fraud in the Face of Camouflage
Bryan Hooi, Hyun Ah Song, Alex Beutel, Neil Shah, Kijung Shin, and Christos Faloutsos
KDD 2016 (*SIGKDD Best Research Paper Award*)

	<p>[18] BEAR: Block Elimination Approach for Random Walk with Restart on Large Graphs <u>Kijung Shin</u>, Jinhong Jung, Lee Sael, and U Kang SIGMOD 2015 (<i>Samsung Humantech Paper Award, SIGMOD Student Travel Award</i>)</p> <p>[19] Distributed Methods for High-dimensional and Large-scale Tensor Factorization <u>Kijung Shin</u> and U Kang ICDM 2014 (<i>ICDM Student Travel Award</i>)</p> <p>[20] Data/Feature Distributed Stochastic Coordinate Descent for Logistic Regression Dongyeop Kang, Woosang Lim, <u>Kijung Shin</u>, Lee Sael, and U Kang CIKM 2014</p>
REFERRED JOURNAL PAPERS	<p>[21] Fast, Accurate and Flexible Algorithms for Dense Subtensor Mining <u>Kijung Shin</u>, Bryan Hooi, and Christos Faloutsos TKDD 2018 - ACM Transactions on Knowledge Discovery from Data</p> <p>[22] Patterns and Anomalies in k-Cores of Real-world Graphs with Applications <u>Kijung Shin</u>, Tina Eliassi-Rad, and Christos Faloutsos KAIS 2018 - Knowledge and Information Systems <i>(Special Issue on the Selected Papers from ICDM 2016)</i></p> <p>[23] Graph-Based Fraud Detection in the Face of Camouflage Bryan Hooi, <u>Kijung Shin</u>, Hyun Ah Song, Alex Beutel, Neil Shah, and Christos Faloutsos TKDD 2017 - ACM Transactions on Knowledge Discovery from Data <i>(Special Issue on the Best Papers from KDD 2016)</i></p> <p>[24] Fully Scalable Methods for Distributed Tensor Factorization <u>Kijung Shin</u>, Lee Sael, and U Kang TKDE 2017 - IEEE Transactions on Knowledge and Data Engineering</p> <p>[25] Random Walk with Restart on Large Graphs Using Block Elimination Jinhong Jung, <u>Kijung Shin</u>, Lee Sael, and U Kang TODS 2016 - ACM Transactions on Database Systems</p>
OTHER PAPERS	<p>[26] Patterns and Anomalies in k-Cores of Real-world Networks <u>Kijung Shin</u>, Tina Eliassi-Rad, and Christos Faloutsos NetSci 2017 (Abstract)</p> <p>[27] Incorporating Side Information in Tensor Completion {Hemank Lamba*, Vaishnavh Nagarajan*, <u>Kijung Shin</u>*, and Naji Shajarisales*} WWW Companion 2016 (Poster)</p>
TEACHING	<p>Instructor - KAIST EE209(B) Programming Structures for Electrical Engineering Spring 2019</p> <p>Teaching Assistant - CMU 10-601 Introduction to Machine Learning Fall 2017 - CMU 15-780 Graduate Artificial Intelligence Spring 2017</p> <p>Guest Lecturer - CMU 10-405 Machine Learning with Large Datasets Spring 2018</p>

SERVICES

Program Committee Member

- ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD) 2019
- The Web Conference (WWW) 2019
- IDEA Workshop @ KDD 2018

Journal Reviewer

- IEEE Transactions on Knowledge and Data Engineering (TKDE) 2018
- Physica A: Statistical Mechanics and its Applications 2018
- IEEE Signal Processing Letters (SPL) 2017
- IEEE/ACM Transactions on Networking (ToN) 2017

Ph.D. Admissions Committee

- Computer Science Department, Carnegie Mellon University 2019