

Kijung Shin

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RESEARCH INTERESTS Graph Mining, Social Media Analysis, Big Data Analytics Systems, Tensor Analysis

EDUCATION **Carnegie Mellon University**, Pittsburgh, PA Sep 2015 - Present
PhD, Computer Science
Advisor: Prof. Christos Faloutsos

Seoul National University, Seoul, Korea Aug 2015
BS, Computer Science and Engineering
BA, Economics (Double Major)
GPA: 4.21/4.30 (First rank in College of Engineering, Summa Cum Laude)

WORK EXPERIENCE Machine Learning and Relevance Engineer Intern at **LinkedIn** May 2017 to Aug 2017
Mentors: Dr. Mahdi Shafiei and Dr. Myunghwan Kim
Developed a generative model for stage learning

Research Intern (Part Time) at **Seoul National University** Jan 2015 to Jun 2015
Advisor: Prof. Byung-Gon Chun
Developed a distributed machine learning library on top of Apache REEF

Research Intern at **KAIST** Jan 2014 to Aug 2014
Advisor: Prof. U Kang
Developed scalable algorithms for random walk with restart and tensor factorization

Associate Researcher at **CYRAM** Jan 2011 to Dec 2013
Supervisor: Mr. Ghi-Hoon Ghim
Developed a social network analysis software (NetMiner 4), a criminal analysis software (NetExplorer 3), and a Twitter analysis and monitoring service (Sopion.com)

REFERRED JOURNAL PAPERS J4. [Kijung Shin](#), Tina Eliassi-Rad, and Christos Faloutsos, "Patterns and Anomalies in k-Cores of Real-world Graphs with Applications", KAIS. (Accepted)

J3. Bryan Hooi, [Kijung Shin](#), Hyun Ah Song, Alex Beutel, Neil Shah, and Christos Faloutsos, "Graph-Based Fraud Detection in the Face of Camouflage", TKDD 2017. (*Special Issue on the Best Papers from KDD 2016*)

J2. [Kijung Shin](#), Lee Sael, and U Kang, "Fully Scalable Methods for Distributed Tensor Factorization", TKDE 2017.

J1. Jinhong Jung, [Kijung Shin](#), Lee Sael, and U Kang, "Random Walk with Restart on Large Graphs Using Block Elimination", TODS 2016.

REFERRED CONFERENCE PAPERS C12. Hemank Lamba, Bryan Hooi, [Kijung Shin](#), Christos Faloutsos, and Jürgen Pfeffer, "ZooRank: Ranking Suspicious Entities in Time-Evolving Tensors", ECML/PKDD 2017. (To Appear)

C11. [Kijung Shin](#), Bryan Hooi, Jisu Kim, and Christos Faloutsos, "DenseAlert: Incremental Dense-Subtensor Detection in Tensor Streams", KDD 2017. (To Appear)

- C10. [Kijung Shin](#), Euiwoong Lee, Dhivya Eswaran, and Ariel D. Procaccia, “Why You Should Charge Your Friends for Borrowing Your Stuff”, IJCAI 2017. (To Appear)
- C9. [Kijung Shin](#), Bryan Hooi, Jisu Kim, and Christos Faloutsos, “D-Cube: Dense-Block Detection in Terabyte-Scale Tensors”, WSDM 2017. (*SIGIR Student Travel Grant*)
- C8. Jinhoh Oh, [Kijung Shin](#), Evangelos E. Papalexakis, Christos Faloutsos, and Hwanjo Yu, “S-HOT: Scalable High-Order Tucker Decomposition”, WSDM 2017.
- C7. [Kijung Shin](#), Tina Eliassi-Rad, and Christos Faloutsos, “CoreScope: Graph Mining Using k-Core Analysis - Patterns, Anomalies and Algorithms”, ICDM 2016.
- C6. [Kijung Shin](#), Bryan Hooi, and Christos Faloutsos, “M-Zoom: Fast Dense-Block Detection in Tensors with Quality Guarantees”, ECML/PKDD 2016.
- C5. Bryan Hooi, Hyun Ah Song, Alex Beutel, Neil Shah, [Kijung Shin](#), and Christos Faloutsos, “FRAUDAR: Bounding Graph Fraud in the Face of Camouflage”, KDD 2016. (*SIGKDD Best Research Paper Award*)
- C4. Hemank Lamba*, Vaishnavh Nagarajan*, [Kijung Shin](#)*, and Naji Shajarisales*, “Incorporating Side Information in Tensor Completion”, WWW Companion 2016.
- C3. [Kijung Shin](#), Jinhong Jung, Lee Sael, and U Kang, “BEAR: Block Elimination Approach for Random Walk with Restart on Large Graphs”, SIGMOD 2015. (*Samsung Humantech Paper Award, SIGMOD Student Travel Award*)
- C2. [Kijung Shin](#) and U Kang, “Distributed Methods for High-dimensional and Large-scale Tensor Factorization”, ICDM 2014. (*ICDM Student Travel Award*)
- C1. Dongyeop Kang, Woosang Lim, [Kijung Shin](#), Lee Sael, and U Kang, “Data/Feature Distributed Stochastic Coordinate Descent for Logistic Regression”, CIKM 2014.

OTHER PAPERS

- O2. [Kijung Shin](#), Tina Eliassi-Rad, and Christos Faloutsos, “Patterns and Anomalies in k-Cores of Real-world Networks”, NetSci 2017. (Abstract)
- O1. [Kijung Shin](#), “Scalable Methods for Random Walk with Restart and Tensor Factorization”, Bachelor’s Thesis, Seoul National University, 2015. (*Excellent CSE Thesis Award*)

RELEASED SOFTWARE

- Dolphin** (<https://github.com/cmssnu/dolphin>) Jan 2015 to Jun 2015
Distributed machine learning library on top of Apache REEF
- NetMiner** (<http://www.netminer.com>) Jan 2011 to Dec 2013
Social network analysis software

AWARDS & HONORS

- ACM SIGKDD Best Research Paper Award Aug 2016
- Korea Foundation for Advanced Studies Scholarship 2015 to 2020
- Excellent CSE Thesis Award, Seoul National University Aug 2015
- Samsung Humantech Paper Award (Gold Prize, 1st in Computer Science) Feb 2015
- Kwanjeong Educational Foundation Scholarship 2010, 2014, 2015
- Best Term Paper Award, Seoul National University Feb 2010
- Scholarship for Superior Academic Performance, Seoul National University 2009
- National Science & Technology Scholarship, Korea Scholarship Foundation 2008

TEACHING EXPERIENCE

- Teaching Assistant of Graduate Artificial Intelligence (CMU 15-780) Spring 2017

GRADUATE	Spectral Graph Theory and the Laplacian Paradigm (CMU 15-859N)	Fall 2016
COURSEWORK	Types and Programming Languages (CMU 15-814)	Fall 2016
	Graduate Artificial Intelligence (CMU 15-780)	Spring 2016
	Multimedia Databases and Data Mining (CMU 15-826)	Spring 2016
	Adv. Intro. to Machine Learning (CMU 10-715)	Fall 2015
	Algorithms in the Real World (CMU 15-853)	Fall 2015
ONLINE	Machine Learning & Artificial Intelligence	
COURSEWORK	<ul style="list-style-type: none"> • Scalable Machine Learning (edX) • Statistical Learning (Stanford Online) • Artificial Intelligence for Robotics (Udacity) • Introduction to Artificial Intelligence (Udacity) • Machine Learning (Coursera) 	<ul style="list-style-type: none"> Aug 2015 Apr 2014 Apr 2012 Dec 2011 Dec 2011
	Data Mining & Social Network Analysis	
	<ul style="list-style-type: none"> • Introduction to Recommender Systems (Coursera) • Networks, Crowds, and Markets (edX) • Social Network Analysis (Coursera) • Networked Life (Coursera) 	<ul style="list-style-type: none"> Aug 2015 May 2014 Nov 2012 Oct 2012
TECHNICAL	Programming Languages	
SKILLS	<ul style="list-style-type: none"> • Java (Advanced) / Python, C (Experienced) / C++, MATLAB (Intermediate) 	
	Big Data Platforms and Databases	
	<ul style="list-style-type: none"> • Hadoop, REEF, MySQL (Experienced) / Oracle database (Intermediate) 	
REFERENCES	Available on request	