Jaebong Son

955 Regent Drive 419 UCB Koelbel 469, Leeds School of Business, Boulder, CO 80309, USA
• 720-360-5057 • Jaebong.Son@colorado.edu

EDUCATION

University of Colorado, Leeds School of Business, Boulder, CO
Ph.D. Candidate (2017, Expected)
- Major: Information Systems
- Dissertation Title: "What Have We Missed When Examining Twitter as a Communication Medium During Disasters?"
  • Essay 1: Topic Diversity of Tweets and Its Effects on Retweeting During Disasters
  • Essay 2: Heuristic Information of Twitter and Its Benefit on Retweeting During Times of Disaster
  • Essay 3: The Initial Propagation of Tweets: Why It Is Important and How to Measure It
- Dissertation Committee: Dr. Jintae Lee (Chair), Dr. Kai R. Larsen,
  Dr. Laura Kornish, Dr. Karina Hauser,
  Dr. Onook Oh
  • Proposal defense scheduled in January 20, 2017

University of Arizona, Eller College of Management, Tucson, AZ
M.S. in Management Information Systems (2010)
- Technical Track
- Minor in Computational Linguistics

Korea University, Seoul, Korea
M.S. in Management Information Systems (2006)

Konkuk University, Seoul, Korea
B.A. in Business Administration and Information Systems (2003)

RESEARCH INTERESTS

Research Areas
- Social Media and Communication
- Intellectual Property and Innovation
- Recommendation Systems

Research Methods
- Computational Linguistics
- Graph Theory
- Hypothesis Testing

JOURNAL PUBLICATIONS

- Hsinchun Chen, Mihail C. Roco, **Jaebong Son**, Shan Jiang, Catherine A. Larson, and Qiang Gao, "Global nanotechnology development from 1991 to 2012: patents, scientific publications, and effect of NSF funding," *Journal of Nanotechnology Research (JNR)*, Vol. 15, No. 9, 2013, pp. 1-21.
- Hsinchun Chen, Mihail C. Roco, and **Jaebong Son**, "Nanotechnology Public Funding and Impact Analysis: A Tale of Two Decades (1991-2010)," *IEEE Nanotechnology Magazine*,

Vol. 7, No. 1, 2013, pp. 9-14.
- **Jaebong Son** and Yongmoo Suh, "Using Degree of Match (DOM) to Improve Prediction Quality in Collaborative Filtering System," *Information Systems Review*, Vol. 8, No. 2, 2006, pp.139-154.

REFEREED CONFERENCE PROCEEDINGS
- Jiyoung Woo, **Jaebong Son**, and Hsinchun Chen, "An SIR model for violent topic diffusion in social media," *2011 IEEE International Conference on Intelligence and Security Informatics*, Beijing, China, 2011, pp. 15-19.

PAPERS UNDER REVIEW
- "Topic Diversity of Tweets and Its Effects on Retweeting during Disasters," **Jaebong Son**, Jintae Lee, and Kai R. Larsen (Under review in MISQ)
- "Heuristic Information of Twitter and Its Benefit on Retweeting During Times of Disaster," **Jaebong Son**, Jintae Lee, Onook Oh, and Jiyoung Woo (Under review in MISQ)

WORKING PAPERS AND WORK-IN-PROGRESS

Social Media & Communication
- "The Initial Propagation of Tweets: Why It Is Important and How to Measure It," **Jaebong Son**, Onook Oh, and Jintae Lee (Status: Under preparation for submission to journals in 1st Quarter of 2017)
- "Understanding the Use of Twitter during Natural Disasters: A Media Synchronicity Theory Perspective," **Jaebong Son**, Jintae Lee, and Onook Oh (Status: Draft in progress)

Intellectual Property and Innovation
- (*Tentative*) "Social Capital of Patent Inventors and Its Impact on Innovation," **Jaebong Son** and Jintae Lee (Status: Preliminary data analysis completed)

Recommendation System
- (*Tentative*) "Network-based Movie Recommender System," **Jaebong Son**, Karina Hauser, and Jiyoung Woo (Status: Implemented a network model for movie recommendation)

TEACHING INTERESTS
- Business Analytics
  - Data Mining and Machine Learning (i.e., Supervised and Unsupervised)
  - Social Network Analysis
  - Computational Linguistics (i.e., Topic Modeling and Text Analytics)
- Database Management
  - Data Modeling, Implementation, and Optimization
  - Database programming (i.e., Transact-SQL and PL-SQL)
- Object-Oriented Programming (i.e., Java)

TEACHING EXPERIENCE

Instructor, University of Colorado at Boulder, CO
- MGMT4205: Business Data Management, Spring 2016
  - Instructor Overall: 5.7/6.0 (Department Average – 5.2; University Average – 5.3)
  - Course Overall: 5.5/6.0 (Department Average – 4.7; University Average – 4.8)

Teaching Assistant, University of Colorado at Boulder, CO

- MSBX5420: Unstructured and Distributed Data Modeling and Analysis, Fall 2016
- MGMT3210: Business Application Programming, Spring 2016
- MGMT3200: Business Analytics, Spring 2016

HONORS & AWARDS
- Business Analytics Fellowship (2016)
- Big Data Analytics Fellowship (2015)
- Hart Fellowship (2015)
- High Performance Computing Fellowship (2015)
- University Fellowship (2014)

ACADEMIC SERVICE
- Ad-hoc reviewer for ACM Transactions on Management Information Systems

INVITED PRESENTATION
- Case Studies of Advanced Analytics, Information Industrial Engineering, *Yonsei University* (2016)
- Applications and Techniques of Natural Language Processing (NLP), Graduate School of Information Security, *Korea University* (2016)
- Opportunities for Biz Students to Become Data Scientists, Business School, *Korea University* (2016)
- Advanced Text Analytics, CRM Team, *Samsung Life Insurance* (2016)
- Competitive Landscape Analysis through Patent Analytics, *Electronics and Telecommunications Research Institute* (2012)
- Intellectual Property and Text Analytics: A Case of Patent Analytics, *Electronics and Telecommunications Research Institute* (2011)

INDUSTRY EXPERIENCE

IBM Global Business Services, Seoul, Korea (September 2012 ~ February 2014)
Managing Consultant, Business Analytics and Optimization (BAO)
- Text Analytics (08/2013~02/2014) on Social Media Data
  - The project initiator
  - Designed an analytics framework to analyze social media data using machine learning, computational linguistics, and statistics
  - Developed a Proof-of-Concept (POC) system of the proposed framework
- Project leader (04/2013~06/2013) of Samsung Electronics Big Data Platform project (POC)
  - Designed and implemented a buddy recommender system
  - Executed topic identification, extraction, and clustering based on movie synopsis
  - Produced a evolutionary, 2-mode network between movies and their topics
- Project leader (09/2012~03/2013) of the LG U+ Big Data Platform project
  - Delivered a series of successful analyses of customers' purchase and viewing behavior of HDTV content, browsing behavior of the Internet, and recommender system for HDTV content
  - Designed and implemented a recommendation module for HDTV contents for smartphone customers by leveraging structured and unstructured data
  - Designed an integrated data model from diverse data sources

Artificial Intelligence Laboratory, Tucson, AZ (January 2010 ~ July 2012)
Research Associate
- Project leader of nanotechnology research funded by National Science Foundation (NSF

award #1249210)
- Executed content analysis on nanotechnology patents to extract technology topics
- Carried out social network analysis to figure out inventors' and assignees' collaboration networks in nanotechnology and semiconductor industry
- Conducted competitor analysis on the semiconductor industry considering Taiwan Semiconductor Manufacturing Company, Samsung Electronics, IBM, and Micron Inc. using patents issued with the United States Patent and Trademark Office
- Designed and developed a large-scale data collection system to gather forum postings from politically unstable countries such as Afghanistan, Somalia, Lebanon, Yemen, and so on for research purposes (70 forums from 14 countries)

SPSS, Seoul, Korea (January 2006 ~ December 2006)
Data Mining Consultant
- Successfully conducted two business intelligence (BI) projects at Korea Exchange Bank and Korean Transportation Safety Authority
- Implemented data mining and statistics components for BI systems based on a Microsoft SQL Server, a SPSS statistics package, and Clementine data mining software
- Analyzed business requirements to gather information for system design and analysis
- Authored an official book about data handling using a SPSS statistics package
- Lectured about data handling using a SPSS statistics package at the SPSS Education Center

ANALYTICAL SKILLS

Natural Language Processing (NLP)
- Experienced in implementing the following components:
  - Named Entity Recognition (NER) to identify Person, Location, and Organization
  - An English statistical part-of-speech (POS) parser based on Hidden Markov chain Model (HMM) and the Viterbi algorithm
- Leveraged the following techniques for research and commercial projects
  - Topic modeling based on Latent Dirichlet Allocation (LDA)
  - Machine learning based sentiment analysis, such as Support Vector Machine (SVM)

Graph Theory and Implementation
- Highly knowledgeable on the following network-related topics:
  - Social Network Analysis, Community Detection, and Visualization
  - Search Algorithms (i.e., A*, All Path Shortest Path, and Dijkstra)
  - Types of network (i.e., directed, bi-directed, and 1- or 2-mode)
  - Types of relationship (i.e., weak, strong, and structural hole)
  - Network measures (i.e., eigenvector, PageRank, and betweenness and closeness centralities)

Statistical Analysis
- A solid foundation on statistical analysis
  - Different types of regression (i.e., OLS, logistic, and binomial)
  - Multiple group comparisons based upon contrast codes
  - Mediation and moderation analysis

Programming Languages: Java, Python, and ASP.NET
- Highly skilled and specialized in processing texts using regular expressions
- Designed and implemented scalable Java-based crawling systems using a SQL Server as data repository

- Experienced in implementing machine learning algorithms, such as K-means, Bayesian networks, a Markov chain model, a neural network, and a genetic algorithm

CERTIFICATIONS

Information Security
- Risk Analyst, Entry Level, CNSS No.4016 (2009)

Database Administration
- Microsoft Data Base Administrator (2003)
- Oracle Certified Professional (2001)