

Byungkyu Kang

CONTACT INFORMATION	Byungkyu Kang, Ph.D., Data Scientist Analytics, CTO, Nokia Technologies http://penguinkang.com +1-805-455-9856	penguinkang@gmail.com
RESEARCH INTERESTS	Intelligent User Interfaces (HCI + AI), Explainable Artificial Intelligence (XAI) — Data science (big data), social computing, machine learning, recommender systems, human-computer interaction.	
EDUCATION	University of California, Santa Barbara , California, USA Ph.D., Computer Science, March 2016 <ul style="list-style-type: none">• Thesis Title: <i>Information Reliability on the Social Web—Models and Applications in Intelligent User Interfaces</i>• Committee: Tobias Höllerer (Advisor), Matthew Turk (UCSB), Xifeng Yan (UCSB) and John O'Donovan (UCSB) M.S., Computer Science, June 2012 <ul style="list-style-type: none">• Thesis Title: <i>An Analysis of Credibility in Microblogs</i>• Advisor: Tobias Höllerer Chung-ang University , Seoul, Korea Bachelor of Engineering, Electrical Electronics Engineering, February 2007	
PROFESSIONAL EXPERIENCE	Nokia Technologies 200 S Mathilda Ave, Sunnyvale, CA, 94086 <i>Data Scientist</i> – Conduct research on big data analytics through statistical modeling, machine learning and visualization. – Extract knowledge from both structured and unstructured data using data mining, and develop AI-based search and recommender systems.	Analytics, Chief Technology Office (CTO) Sep 2016 - Present
	IBM Thomas J. Watson Research Center 1101 Kitchawan Rd, Yorktown Heights, NY 10598 <i>Visiting Scholar</i> – Conducted research on graph mining and machine learning/reasoning. – Conduct research on data visualization and intelligent user interfaces. Mentor: Sabrina Lin	Network Science and Machine Reasoning Solutions Jun 2016 - Sep 2016
	UCSB University of California, Santa Barbara, CA 93106 <i>Research Assistant / Postdoctoral Researcher</i> – Modeling and predicting information quality on the Social Web (credibility, expertise, influence, etc) – Interactive interface design for complex network analysis – Interactive data visualization and visual analytics – Ambient data visualization (collaboration with UCSB Media Arts and Technologies) – Real-time hand pose recognition (computer vision)	Imaging, Interaction, and Innovative Interfaces (FourEyes) Lab Jan 2011 - May 2016

Adobe Research Systems Technology Lab
321 Park Ave, San Jose, CA 95113 Jun 2014 - Sep 2014
Data Scientist Intern, Data Science and Visualization Research
– Designed an audience manager for social marketers that detects influential users from social media and provides a content-based landscape of the influential users through real-time web-based visualization interface.
Mentor: Nedim Lipka

Yahoo! Yahoo Labs
Diagonal 177, 08018 Barcelona, Catalunya, Spain Jun 2013 - Sep 2013
Research Intern
– *Entity-Driven Exploratory and Serendipitous Search System* Constructed bundling algorithm and designed user interface and novel data visualization for entity-driven exploratory search. This project is under the EU project ‘Linguistically Motivated Semantic Aggregation Engines (LiMoSINE)’.
Mentor: Mounia Lalmas

Korea Institute of Science and Technology Imaging Media Research Center
San 5-63, Hawolgok-dong, Seongbuk-gu, Seoul, South Korea Jun 2012 - Aug 2012
Research Intern
– *Real-Time Hand Pose Recognition from a Single Depth Image* Conducted research on hand pose recognition using depth image based on object recognition approach using machine learning algorithms such as random forest decision tree and boosting algorithms.
Mentor: Hwasup Lim

IBM Global Technology Service
10 Gukjegeumyung-ro, Yeoeuido-dong, Yeongdeungpo, Seoul, Korea Oct 2008 - Jun 2009
System Engineer
– Designed and implemented data centers and supported high availability for national financial companies (e.g. Korea Exchange and major banks).

SAMSUNG Information Technology R&D Center, Samsung SDS
7-29 Sincheon-dong, Songpa-gu, Seoul, South Korea Jan 2007 - Oct 2008
Research Associate
– *Wireless Sensor Network (WSN)* Conducted a national pilot research project (with Korea Expressway Corp)
– *UI Design for Mobile Platforms* Participated in a formative research project for novel smartphone user interface and operating system.
– Participated in multiple pilot projects that design/implement RFID/WSN-based intelligent systems.

PUBLICATIONS

Papers Under Review

- **Byungkyu Kang**, Tobias Höllerer and John O’Donovan, “Evaluating personal metadata and credibility perception in social media streams,” ACM Transactions on Interactive Intelligent Systems (TiiS)
- Ilaria Bordino, Olivier Van Laere, Yelena Mejova, **Byungkyu Kang** and Mounia Lalmas, “Beyond Entities: Promoting Exploratory Search with Bundles,” Information Retrieval, Kluwer Academic Publishers

Peer Reviewed Papers

- **Byungkyu Kang**, Haleigh Wright, Tobias Höllerer, Ambuj Singh and John O’Donovan, “Through The Grapevine: A Comparison of News in Microblogs and Traditional Media,” Lecture Notes in Social Networks, Berlin, Springer-Verlag, 2017
- **Byungkyu Kang**, Nava Tintarev, Tobias Höllerer and John O’Donovan, “What am I not seeing? An Interactive Approach to Social Content Discovery in Microblogs,” 8th International Conference on Social Informatics (SocInfo 2016), Springer, 279-294p
- **Byungkyu Kang**, Shinsuke Nakajima, Tobias Höllerer and John O’Donovan, “A Cross-Cultural Analysis of Explanations for Product Reviews,” ACM Conference on Recommender Systems (RecSys’16)
- Yuuki Matsunami, Mayumi Ueda, Shinsuke Nakajima, Takeru Hashikami, Sunao Iwasaki, John ODonovan, and **Byungkyu Kang**, “A Method for Automatic Scoring of Various Aspects of Cosmetic Item Review Texts based on Evaluation Expression Dictionary,” The 24th International MultiConference of Engineers and Computer Scientists (IMECS 2016), Hong Kong, 16-18 March, 2016 (in Press)
- Nava Tintarev, **Byungkyu Kang**, Tobias Höllerer and John O’Donovan. “Inspection Mechanisms for Community-based Content Discovery in Microblogs,” Joint Workshop on Interfaces and Human Decision Making in Recommender Systems (intRS) held in conjunction with the 9th ACM Conference on Recommender Systems, Vienna, Austria, September 2015.
- **Byungkyu Kang**, Tobias Höllerer and John O’Donovan. “The Full Story: Automatic detection of unique news content in Microblogs”, Proceedings of the 2015 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM). Paris, France, August 2015.
- **Byungkyu Kang**, Tobias Höllerer and John O’Donovan. “Believe it or Not? Analyzing Information Credibility in Microblogs”, Proceedings of the 2015 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM). Paris, France, August 2015.
- Sujoy Sikdar, Sibel Adalı, Md Tanvir Amin, Tarek Abdelzaher, Kevin Chan, Jin-Hee Cho, **Byungkyu Kang**, John O’Donovan. “Finding True and Credible Information on Twitter”, 17th International Conference of Information Fusion (IEEE FUSION), Salamanca, Spain, July 2014.
- John O’Donovan, **Byungkyu Kang**. “Competence Modeling in Twitter: Mapping Theory to Practice”, International Conference on Social Computing (SocialCom 2014). Palo Alto, California., USA. May 27th-29th 2014
- **Byungkyu Kang**, George Legrady and Tobias Höllerer. TweetProbe: A Real-Time Microblog Stream Visualization Framework. IEEE VIS, Arts Program (VISAP), Atlanta, Georgia, October 2013.
- Sujoy Sikdar, **Byungkyu Kang**, John O’Donovan, Tobias Höllerer, Sibel Adalı, “Understanding Information Credibility on Twitter”, IEEE/ASE SocialCom, Washington, DC, USA, 2013 (**Best paper**)
- Sujoy Sikdar, **Byungkyu Kang**, John O’Donovan, Tobias Höllerer, Sibel Adalı, “Cutting Through the Noise: Defining Ground Truth in Information Credibility on Twitter”, ASE HUMAN JOURNAL 2.1, 2013

- James Schaffer, **Byungkyu Kang**, Tobias Höllerer, Hengchang Liu and John O'Donovan, "Interactive Interfaces for Complex Network Analysis: A QoI Perspective", IEEE International Conference on Pervasive Computing and Communications (PERCOM), 2013
- John O'Donovan, **Byungkyu Kang**, Greg Meyer, Tobias Höllerer and Sibel Adalı, "Credibility in Context: An Analysis of Feature Distributions in Twitter", IEEE SocialCom, Amsterdam, Netherlands, 2012
- **Byungkyu Kang**, John O'Donovan and Tobias Höllerer, "Modeling Topic Specific Credibility in Twitter", International Conference on Intelligent User Interfaces (IUI), Lisbon, Portugal, 2012
- **Byungkyu Kang**, John O'Donovan and Tobias Höllerer, "A Framework for Modeling Trust in Collaborative Ontologies", Proceedings of the sixth Graduate Student Workshop on Computing, 2011, UC Santa Barbara, 39-40.
- **Byungkyu Kang**, Mathieu Rodrigue, Tobias Höllerer and Hwasup Lim, "Poster: Real Time Hand Pose Recognition with Depth Sensors for Mixed Reality Interfaces", IEEE Symposium on 3D User Interfaces (3DUI), 2013.

Exhibitions

- **Byungkyu Kang**. "TweetProbe". In A. G. Forbes and L. Thorson, editors. The IEEE VIS 2013 Art Show Catalog, pages 12-13. IEEE, 2013.
- George Legrady, **Byungkyu Kang**. "Korea - 2012", Data Curation, Museum of Art, Seoul National University, 23 May - 18 Aug, 2013
- Participation in "Making Visible the Invisible", Information visualization using Seattle public library transactions. Media Arts and Technology Program, UC Santa Barbara, 2013
- "Media Arts and Technology End of Year Show", Research on intelligent interfaces, data visualization, augmented reality and computer vision, UC Santa Barbara, 2011-2015

AWARDS AND FELLOWSHIPS

- Best Paper Award, IEEE/ASE International Conference on Social Computing (SocialCom 2013) September, 2013
- Doctoral Student Travel Grants, Academic Senate, The Regents of the University of California (\$1,100) August, 2015
- Graduate Student Award, National Science Foundation & ACM International Conference on Intelligent User Interfaces (IUI) (\$2,500) February, 2012
- Award of Excellence, Korea Expressway Corp (1 of 2 grantees) (An appreciation award for national pilot research projects) September, 2007
- Teaching Assistant Fellowship, Ministry of Knowledge and Economy of Korea March, 2005 - December, 2006
- Librarian scholarship, Central Library, Chung-ang University 2003 - 2006

TEACHING AND PRESENTATIONS

Lectures / Teaching Assistants

- Guest Lecturer, Network Science and Data Management (CS290D), UC Santa Barbara Feb. 2016.
- Guest Lecturer, Social Data Mining and Interactive Visualization, IGERT Summer Boot Camp, UC Santa Barbara Sep. 2015.

- Guest Lecturer, Visualizing Information (MAT 259), UCSB 2014 – 2015
Covered data mining methods such as web/social media crawling, basic machine learning techniques, database operation, and both client and web-based data visualization techniques. (20 graduate students)
- Teaching Assistant, Creative Problem Solving and Mar. 2015–Dec. 2016
Engineering Design, Chung-ang University

Invited Talks

- “Information Credibility and Interactive User Interfaces” Jul. 4. 2016
Universidad del Desarrollo, Santiago, Chile
- “Interactive Spatial Representations for Search and Nov. 17. 2015.
Recommendation Algorithms”, ThinkSpatial: The UCSB Brownbag Forum on Spatial Thinking, UC Santa Barbara
- Adobe Internal Tech Demo, Adobe Research, Sep, 2014
Online webinar session that introduces an emerging or trending technology. “Mining and analyzing social big data using Apache Spark”
- Early Academic Outreach Program (EAOP) Mar 7, 2014
University of California, Invited talk to high school students.
- Demo at the invited talk, “Making Visible the Invisible”, May 7, 2013
UC Santa Barbara Library

SERVICE

Outreach

- Speaker to showcase Four Eyes Laboratory research 2014
to middle and high school students, UC Santa Barbara
- Speaker to motivate computer science studies 2014
at Middle Schools, Goleta CA
- Interviewee to showcase Four Eyes Laboratory research 2014
Duksung Women’s University, Seoul, Korea
- Meeting with prospective and admitted UCSB students 2013-2015

Steering Committee

- Web and Design Chair – The 21st ACM International Conference on Intelligent User Interfaces (IUI), March 7, 2016, Sonoma, California

Program Committee[†] and Reviewer

- ACM Transactions on Interactive Intelligent Systems (TIIS) (Inaugural Board of Distinguished Reviewer)
- The 23rd ACM International Conference on Intelligent User Interfaces (IUI, 2018)
- the 7th International Workshop on Modeling Social Media at the 25th International World Wide Web Conference (WWW), 2016
- Social Network Analysis and Mining, Springer-Verlag, 2016
- The 25th International World Wide Web Conference (WWW), 2016
- Joint Workshop on Interfaces and Human Decision Making for Recommender Systems (IntRS) at the 9th ACM Conference on Recommender Systems, 2015[†]
- The 11th IEEE International Conference on Automatic Face and Gesture Recognition (FG), 2015
- Data-driven User Behavioral Modelling and Mining from Social Media Workshop (DUBMOD) at ACM Conference of International and Knowledge Management (CIKM), 2014[†]
- Turkish Journal of Electrical Engineering and Computer Sciences, The Scientific & Technological Research Council of Turkey, 2014[†]

- Posters & Demonstrations — IEEE Virtual Reality (VR), 2014
- Data-driven User Behavioral Modelling and Mining from Social Media Workshop (DUBMOD) at ACM Conference of International and Knowledge Management (CIKM), 2013[†]
- ASE/IEEE International Conference on Social Computing, 2013
- Posters & Demonstrations — The 18th ACM International Conference on Intelligent User Interfaces (IUI), March 19, 2013, Santa Monica, CA, USA
- The 7th Graduate Student Workshop on Computing (GSWC), 2012, UC Santa Barbara[†]

SKILLS

- *Programming Languages:* Python, Scala, JAVA, Javascript (AngularJs), R, C/C++, PHP, MATLAB, HTML5 (Canvas), Processing, ActionScript(FLEX).
- *Databases and Distributed Systems* AWS, Apache Spark, NoSQL, SQL, Hadoop
- *Specialized Tools and Libraries* TensorFlow, D3.js, Node.js, Express.js, p5.js, Flask, Twisted, Weka, NLTK, OpenCV, PBRT, ARToolkit, etc.
- *Platforms* Linux, MacOSX, Windows, AIX

LANGUAGES

- English, Korean, Spanish (intermediate)

EXTRA CURRICULAR ACTIVITIES

- *Volunteer Club*, Chung-ang University, Seoul, Korea 2000 - 2009
Community service for orphans(0-8 years old children) including education and whole caring since 2000
- *World Disaster Relief Organization*, Korea January, 2008 - May, 2012
Long-term Supporter and Volunteer

REFERENCES

Tobias Höllerer

Professor, Department of Computer Science
University of California, Santa Barbara
Website:<http://www.cs.ucsb.edu/~holl/>
Email:holl@cs.ucsb.edu

Matthew Turk

Professor, Department of Computer Science
University of California, Santa Barbara
Website:<http://www.cs.ucsb.edu/~mturk/>
Email:mturk@cs.ucsb.edu

George Legrady

Professor, Media Arts & Technology Graduate Program (Chair) / Department of Art
University of California, Santa Barbara
Website:<http://www.mat.ucsb.edu/~g.legrady/>
Email:legrady@arts.ucsb.edu

John O'Donovan

Research Fellow, Department of Computer Science
University of California, Santa Barbara
Website:<http://cs.ucsb.edu/~jod/>
Email:jod@cs.ucsb.edu

Nedim Lipka

Research Scientist, Systems Technology Lab
Adobe Research, San Jose, CA

Website:<http://www.adobe.com/technology/people/san-jose/nedim-lipka.html>
Email:lipka@adobe.com

Hwasup Lim
Senior Research Scientist, Imaging Media Research Center
Korea Institute of Science and Technology (KIST)
Website:<http://www.imrc.kist.re.kr/wiki/hslim/>
Email:hslim@imrc.kist.re.kr