

Daniel Youngho Kim, Ph.D.

CONTACT INFORMATION	Customer Analysis Business Team, West Campus, Samsung SDS, 125, Olympic-ro 35 gil, Songpa-gu, Seoul 05510, Republic of Korea	PHONE: +82-10-4195-7436 (mobile) E-MAIL: daniel.youngho.kim@gmail.com HOMEPAGE: http://danielykim.me/ BLOG: https://danielykim.github.io/
STRONG POINTS	<ul style="list-style-type: none">• Big Data Analysis Experience: Entire Korean web graph (including 0.1 billion web pages and 13 billion links), the U.S. patent records (spanning over 2 centuries and including 10 million patents), and so on. (See the publication list below).• Multidisciplinary collaboration experience with art historians, computer scientists, economists, historians, sociologists, statisticians, and so on.• 10 academic papers (data science + physics) and 11 data visualizations.	
EMPLOYMENT HISTORY	Samsung SDS, Republic of Korea Data Scientist / Senior Consultant September 2016 – Present <ul style="list-style-type: none">• Collaboration with the largest semiconductor company in South Korea: a deep learning project (July 2017 – December 2017). Keywords: Python, TensorFlow, Keras, and Convolutional Neural Network.• Collaboration with one of the largest e-commerce companies in South Korea: adaptive sales quantity time-series forecasting with R in parallel and interactive data visualization (January 2017 – March 2017). Keywords: R forecast, R shiny dashboard, R htmlwidgets, and d3.js. Natural Science Research Institute, KAIST, Republic of Korea Post-Doctoral Researcher August 2015 – August 2016 <ul style="list-style-type: none">• Large-scale network/image/text analysis• Interactive data visualization: d3.js and processing.js• High performance scientific computer simulation	
INDUSTRY EXPERIENCE	Samsung Economic Research Institute, Republic of Korea Research Assistant, March 2012 to June 2012 <ul style="list-style-type: none">• Web crawling• Text mining CYRAM, Republic of Korea Internship Fellow January 2008 to June 2008 <ul style="list-style-type: none">• Network analysis	
HARDWARE AND SOFTWARE SKILLS	<ul style="list-style-type: none">• Large-scale data analysis with PYTHON (since 2011), R (from 2015), C/C++ (since 2009) and Linux shell script (since 2009). Fluent in various Python libraries and R packages for exploratory data analysis and scientific computation in parallel.• Interactive data visualization with d3.js, processing.js, Jupyter widgets, and R shiny.• Others: Fluent in regular expression. Crawling/Parsing web pages with PYTHON.	
EDUCATION	Ph.D., Physics, KAIST, Republic of Korea September 2008 – August 2015 Advisor: Hawoong Jeong, Ph.D. B.S., Physics, KAIST, Republic of Korea March 2004 – August 2008 Advisor: Hawoong Jeong, Ph.D. Jeonbuk Science High School, Republic of Korea March 2002 – February 2004	
ACADEMIC POSITIONS	Natural Science Research Institute, KAIST, Republic of Korea Post-Doctoral Researcher August 2015–August 2016	

Department of Physics, KAIST, Republic of Korea

Research Assistant

September 2011–August 2015

Teaching Assistant

September 2008–August 2011

Santa Fe Institute, USA

Graduate Fellow

October 2013–April 2016

Institute for New Economic Thinking, University of Oxford, UK

Academic Visitor

February 2016–May 2016

Visiting Research Assistant

November 2013–June 2014

PUBLICATIONS

Journals

1. Byunghwee Lee, **Daniel Kim**, Dongwoo Kim, Hawoong Jeong. “N-gram Web Service and Stylometric Analysis on Korean Historical Documents” *New Physics: Sae Mulli* **66**, 4 (2016). Doi:10.3938/NPSM.66.502
2. **Daniel Kim**, Daniel Burkhardt Cerigo, Hyejin Youn, Hawoong Jeong. “Technological novelty profile and invention’s future impact” *EPJ Data Science* **5**:8 (2016). arXiv:1512.06169 Doi:10.1140/epjds/s13688-016-0069-1
3. **Daniel Kim**, Seung-Woo Son, Hawoong Jeong. “Large-Scale Quantitative Analysis of Painting Arts” *Scientific Reports* **4**, 7370 (2014). Doi:10.1038/srep07370
4. Kihong Chung, Yongjoo Baek, **Daniel Kim**, Meesoon Ha, Hawoong Jeong. “Generalized epidemic process on modular networks” *Phys. Rev. E* **89**, 052811 (2014). Doi:10.1103/PhysRevE.89.052811
5. Jungjoo Seo, Jinil Kim, Eunsang Kim, **Daniel Kim**, Hawoong Jeong, Sung-Ryul Kim, Kunsoo Park. “Link Structure Analysis of Korean Web Graph” *Journal of KIISE : Computing Practices and Letters* **19**, 7 (2013).
6. Yongjoo Baek, **Daniel Kim**, Meesoon Ha, Hawoong Jeong. “Fundamental Structural Constraint of Random Scale-Free Networks” *Phys. Rev. Lett.* **109**, 118701 (2012). Doi:PhysRevLett.109.118701
7. **Daniel Kim**, Seung-Woo Son, Hawoong Jeong. “Demographic Studies of Internet Routers” *J. Korean Phys. Soc.* **60**, 585 (2012). Doi:10.3938/jkps.60.585

Conferences, peer-reviewed

1. Sue Moon, Jinyoung You, Haewoon Kwak, **Daniel Kim** and Hawoong Jeong. “Understanding Topological Mesoscale Features in Community Mining” *COMSNETS 2010* Bangalore, India, January 2010 (2010). Doi:10.1109/COMSNETS.2010.5431994

SUBMITTED PAPERS

1. Francois Lafond, Daniel Kim, “Long-run dynamics of the U.S. patent classification system” arXiv:1703.02104
2. Byunghwee Lee, **Daniel Kim**, Hawoong Jeong, Seunghye Sun, Juyong Park. “Understanding the historic emergence of diversity in painting via color contrast” arXiv:1701.07164

AWARDS AND
HONORS

Awards

1. 3rd grade award, BK21+ graduate student essay contest for overseas visits (July 21, 2015)
2. Best oral presentation award, Korean Physical Society Meeting (Daejeon Convention Center, Daejeon, Korea, April 22-24, 2015)
3. Best oral presentation award, Korean Physical Society Meeting (Phoenix Park, Pyeongchang, Gangwon-do, Korea, October 24-26, 2012)
4. Best team project award, the 3rd KIAS CAC Summer School on Parallel Computing (KIAS, Korea, June 26-28, 2012)
5. Best poster award, Korean Physical Society Meeting (Daejeon Convention Center, Daejeon, Korea, April 24-26, 2012)
6. Best oral presentation award, Korean Physical Society Meeting (Daejeon Convention Center, Daejeon, Korea, April 13-15, 2011)
7. Best poster award, Korean Physical Society Meeting (Daejeon Convention Center, Daejeon, Korea, April 21-23, 2010)
8. Best poster award, the 3rd BK21 Young Physicists Workshop (Seoul Natl. Univ., Seoul, Korea, January 15-16, 2010)

Honors

Graduate Fellowship, Santa Fe Institute	October 2013 – present
Research Assistantship, KAIST	September 2011 – August 2015
Teaching Assistantship, KAIST	September 2008 – August 2011
Graduate Student Research Scholarship, KOSEF	September 2008 – August 2009
Department Honor Scholarship, KAIST	March 2006 – November 2007

DATA
VISUALIZATIONS

Click each item below and freely try it. See also <http://danielykim.me/>

1. Sales Quantity Phase Space Trajectory
2. Interactive Sales Quantity Bar Chart
3. Interactive Sales Quantity Time Series
4. South Korea population density map
5. Patent Reclassification Flow Interactive Diagram
6. Interactive Vicsek Model
7. Movie: Event Emergence in Sillok
8. Worldwide Patent Citation Map
9. Technology Category Network
10. Movie: Technology Code Strength Evolution
11. Sillok Status Network

MEDIA COVERAGE

1. The paper D. Kim, D. B. Cerigo, H. Jeong, H. Youn, “Technological novelty profile and invention’s future impact” [*EPJ Data Science* **5**:8 (2016)] was introduced in SpringerOpen blog and Santa Fe Institute news.
2. The paper D. Kim, S.-W. Son, H. Jeong, “Large-scale quantitative analysis of painting arts”, [Sci. Rep. **4**, 7370 (2014)] was posted on Nature.com main page, being selected as a Nature Research Highlight (also held the first rank of the most viewed research highlight on Nature.com from 14 December 2014 to 14 January 2015). Subsequently, it was introduced and covered in PNAS, Daily Mail Online, Business Insider Australia, 5 Korean TV news stations (Yeonhap news TV, YTN, KBS, MBC, and TJB) and 18 Korean major newspapers.
3. In 2012, EBS, a Korean educational TV channel, conducted a questionnaire survey at a Korean middle school in Seoul, and my PhD supervisor and I were involved in analysis of its survey data. The result of my analysis was on TV on 24th April 2012.

REFERENCE

Hawoong Jeong, Ph.D.

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