Ada H. Lee

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EDUCATION

Northwestern University, Evanston, Illinois
Doctor of Philosophy Candidate in Chemical Engineering, Anticipated December 2018
Dissertation: Diffusion of innovation in hospital network
Advisor: Professor Luis A.N. Amaral, Ph.D.
GPA: 3.9/4.0
Seoul National University, Seoul, S. Korea
Bachelor of Science in Chemical Engineering, February 2013
GPA: 90.7 percentile
University of Washington, Seattle, Washington
Exchange student
GPA: 3.84/4.00

RESEARCH INTEREST

My research interest is how small groups of professionals in their workspaces, such as a team of physicians at a hospital. Many decisions that are made by professionals have a large impact on the society: decisions made by physicians at a hospital will affect all of the patients who are being treated. Understanding how these communities behave can help us advise the professionals, and help them make decisions that more positively influence their communities and society in general.
Key words: Complex networks, machine learning, statistical analysis, behavioral data, adoption of innovation, habit formation, decision making process

ACADEMIC RESEARCH EXPERIENCE

Graduate Research Assistant, Northwestern University
September 2013 – Present, Evanston, Illinois

- Developed interventions to promote adoption of innovations in a community where relationships can be represented as multipartite networks using various spreading models (SIR, contagion, and persuasion models).
- Designed smartphone applications collaboration with software engineers to aid physicians in patient care.
- Presented visualization of complex data to interdisciplinary team of clinicians (physicians, nurses, therapists, etc.,)

Kellogg Management for Scientist and Engineers, Kellogg School of Business
June 2018 – August 2018, Evanston IL

- Developed business expertise and leadership skills through intensive course work and practical application.

Research Assistant, Center for Public leadership, Seoul National University
June 2011 – December 2012, Seoul, S. Korea

- Evaluated Korea Public Leadership Index (KPLI) that was later to be taken by Korean Congress.
- Supported training and designing of student musical, 'President is Gone' performed in 2012.

Research Intern, Cell and Microbial Engineering Laboratory, Seoul National University
January 2012 – December 2012

- Utilized FRET-based monitoring to study binding between GPCR receptor and its protein ligand

Research Intern, Biomolecular Engineering Laboratory , Seoul National University
January 2011 – February 2011

- Determined and compared interaction between Hsp90 Co-chaperones yeast and human cell line, Hek 293 *in vivo*

INDUSTRIAL RESEARCH EXPERIENCE

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Contractor, Korea Institute of Science and Technology Evaluation and Planning**,**
March 2013 – May 2013, Seoul, S. Korea

- Evaluated global policy trend on climate change as preliminary research for Korean climate change policy.
- Developed expertise in government projects and relationships to private sectors.

Research and Development Intern, Samsung SDI**,**
June 2012 – July 2013, Kiheung, S.Korea

- Proved the impact of the thickness and composition of anodes on the total performance of Lithium-ion battery.
- Presented the findings of research to project managers.

PUBLICATIONS

Under review

- H.A. Lee., L.A.N. Amaral "Throwing the baby out with the bath water: Projected networks cannot capture dynamics on multipartite networks.", Nature Human Behavior, 2018

Under review

- L.A.N Amaral, A.G. Moreira, M.L. Dunand, H.T. Navarro, H.A. Lee**,** 'Hollywood's Golden Age and its century-long impact on gender balance in the United States movie industry', Nature, 2018

CONFERENCE PRESENTATIONS

- **Invited talk**, "Big Bold Steps to Big Data", Korean Women's International Network 2018 Luncheon, 2018
- **H.A. Lee,** L.A.N. Amaral "Spreading dynamics in multipartite networks and its projections", 9th International Conference on Complex Systems, Cambridge, MA, 2018
- **H.A. Lee,** L.A.N. Amaral "Impact of time aggregation level for understanding dynamics in temporal network." Northwestern Computational Research day, Evanston, IL, 2017
- **H.A. Lee,** L.A.N. Amaral "Novel smartphone application to replace checklist for physician rounding." 13th Annual Lewis Landsberg Research Day, Chicago, IL, 2017
- **H.A. Lee,** L.A.N. Amaral "Projection of bipartite network and misleads to conclusions in network dynamics." Physics Society March Meeting, New Orleans, LA, 2017
- H.A. Lee, A.R. Pah, L.A.N. Amaral "Algorithm for optimal generation of generative null models of small multipartite network", Computational Social Science Summit, Evanston, IL, 2015

TEACHING EXPERIENCE

Teaching Assistant, Northwestern University Big Data Initiative: Programming Bootcamp
May 2015, September 2017 Evanston, Illinois

- Taught Python, data analysis, and data visualization made course materials and homework.
- Organized and managed student registration and homepage of the boot camp

Teaching Assistant, NU Postdoctoral Forum Programming and Data Science Summer Workshops
July 2017 – August 2007, Evanston, Illinois

- Assisted Python learning summer course for graduate students and post-docs

Teaching Assistant, CHEM_ENG 352 Chemical Engineering Design Project
April 2017 – June 2017, Evanston, Illinois

- Provided technical assistance for undergraduate students in a chemical engineering design course. Monitored individual student progress.

Teaching Assistant, CHEM_ENG 395 Networks
April 2016 – June 2016, Evanston, Illinois

- Supported professor with teaching an advanced topic on networks for graduate students.
- Assisted students in understanding course materials and lead discussions on their research topics.

Teaching Assistant, CHEM_ENG 312 Probability & Statistics for Chemical Engineering

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January 2015 – March 2015, Evanston, Illinois

- Supported professor with teaching an engineering statistics class for undergraduate students. Revised teaching materials and updated information for student course packets.
- Assisted students in understanding course materials and graded students' assignments and tests

Teaching Assistant, MBIOTECH 402 Bioprocess Engineering Lab (Laboratory)
September 2013 – December 2013, Evanston, Illinois

- Supervised graduate students in bioprocess engineering laboratory and facilitated group discussions

COMMUNITY AND DEPARTMENTAL SERVICE

Coordinator, Mentorship Opportunities for Research Engagement, NU, Evanston, IL
September 2017 – Present
Core member, McCormick Graduate Leadership Council, Northwestern University, Evanston, IL
September 2015 – June 2017
Representative, Youth Climate Conference Asia, Kuwait City, Kuwait
February 2009

HONORS AND AWARDS

- Seoul National University Alumni Association Chicagoland scholarship 2017

PROFESSIONAL AFFILIATIONS

- Graduate Women in Science (GWIS) 2018 – Present
- Korean Scientist and Engineer Association (KSEA) 2017 – Present

PROFICIENCY AND SKILLS

- Python (4+ years): numpy scipy pandas, networkx, matplotlib, statistical analysis
- Programming skills: MySQL, C/C++, CSS3, HTML5, LaTeX
- Software: Microsoft Office, Adobe Illustrator
- Language: Korean (Native)

REFERENCES

- **Brian Uzzi, Ph.D.**
  Professor
  Kellogg Graduate School of Management, Northwestern University,
  2211 Campus Drive, Evanston, IL 60208
  (847) 491-8072
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- **Linda Broadbelt, Ph.D.**
  Professor
  Department of Chemical and Biological Engineering, Northwestern University,
  2145 Sheridan Road, Evanston, IL, 60208
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  broadbelt@northwestern.edu

- **Neda Bagheri, Ph.D.**
  Assistant Professor
  Department of Chemical and Biological Engineering, Northwestern University,
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