

Eun Lee

Network Science, Data Science, Computational social Science, Statistical Physics
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APPOINTMENTS

UNIV. OF NORTH CAROLINA-CH
POSTDOCTORAL ASSOCIATE
MENTOR: PETER J. MUCHA
Feb 2018 - present | Chapel Hill, USA

EDUCATION

SUNGKYUNKWAN UNIV.
PH.D. IN ENERGY SCIENCE
ADVISOR: PETTER HOLME
Feb 2018 | Suwon, South Korea

SUNGKYUNKWAN UNIV.
MS. IN ENERGY SCIENCE
Aug 2013 | Suwon, South Korea

EWHA WOMANS UNIV.
BS. IN ELECTRONIC ENGINEERING
Aug 2007 | Seoul, South Korea

SKILLS

- Python • Matlab • C
- Network analysis • Data analysis
- Data modeling • Statistical physics

RESEARCH KEYWORDS

- Social Networks • Temporal Networks
- Opinion Dynamics • Disease Spreading
- Perception • Inequality • Minorities
- Brain networks • Social stratification
- Social segregation • Cognitive science

SHORT INTRODUCTION

I am a post-doctoral researcher in the Department of Mathematics at the University of North Carolina (Chapel Hill) with an interest in contributing to a deeper understanding of the interplay among social network structure, the dynamics on and of that structure, perception, and collective behavior. My research interest lies in four topics:

- The effects of the social network structure on perceptions.
- The effect of perceptions on the collective behavior.
- The co-evolution of social networks and human behavior.
- Understanding dynamics on and of temporal and social networks.

RESEARCH PUBLICATIONS

PUBLICATIONS IN REFERRED JOURNALS

- E. Lee, F. Karimi, Claudia Wagner, H.-H. Jo, Markus Strohmaier, Mirta Galesic, "Homophily and minority size explain perception biases in social networks", accepted in Nature Human Behavior.
- E. Lee, Sungmin Lee, Y.H. Eom, P. Holme, H. H. Jo, "Impact of perception models on friendship paradox and opinion formation", Physical Review E, 99(5), 052302 (2019).
- E. Lee, P. Holme, "Social contagion with degree-dependent thresholds", Physical Review E, 96(1), 012315 (2017).
- E. Lee, P. Holme, S. H. Lee, "Modeling the dynamics of dissent", Physica A, 486, 262 (2017).
- E. Lee, P. Holme, "Impact of mobility structure on optimization of small-world networks of mobile agents", European Physical Journal B, 89(6), 143 (2016).
- E. Lee, P. Holme, "Network characteristics of individual pigments in cyanobacterial photosystem II core complexes", Journal of the Korean Physical Society, 63(11), 2255-2261 (2013).

UNPUBLISHED PREPRINT(S)/PAPER(S) IN PREPARATION

- E. Lee, P. J. Mucha, "Effective temporal network structure in randomizations", in preparation.
- E. Lee, S. Emmons, R. Gibson, J. Moody, P. J. Mucha, "Concurrency and reachability in tree-like temporal networks", in preparation (preprint : <https://arxiv.org/abs/1905.08580>).
- M. J. Lee, E. Lee, D.-S. Lee, S. H. Lee, "Uncovering hidden mutual importance in networks via information entropy", in preparation.

TALKS AND SEMINARS

ORAL PRESENTATIONS

- “Homophily explains perception bias in social networks” (Netsci, Vermont, USA.)
June, 2019
- “Concurrency and reachability in tree-like temporal networks” (SIAM NS, Snowbird, USA.)
June, 2019
- “Introduction of Network Science” (Girls talk Math, Department of Mathematics, UNC, Chapel Hill, USA.)
July, 2018
- “Homophily explains perception biases in social networks” (KPS fall meeting, Gyeongju, Korea)
October, 2017
- “Social contagion with degree-dependent thresholds” (APCTP Workshop, Pohang, Korea)
December, 2016
- “The effects of correlation between influential level and threshold in opinion dynamics” (Conference on Complex Systems, Amsterdam, Netherland)
September, 2016
- “Modeling the dynamics of dissent” (Netsci 2016, Seoul, Korea)
June, 2016
- “Opinion formation in society with inhomogeneous status distribution” (Netsci-X, Wroclaw, Poland)
January, 2016
- “Modeling of social uprising with inhomogeneous status distribution” (KPS Spring meeting, Daejeon, Korea)
April, 2015
- “The influence of movement patterns in dynamic wireless network power consumption” (Netsci-X, Rio de Janeiro, Brazil)
January, 2015

POSTERS

- “Effect of the perception mechanisms on the Friendship Paradox” (Netsci, Indiana, USA.)
June, 2017
- “The effects of correlation between influential level and threshold in opinion dynamics” (GESIS winter symposium, Cologne, Germany)
December, 2016
- “The influence of heterogeneous threshold in opinion dynamics” (Netsci, Seoul, Korea)
June, 2016
- “The influence of unequal distribution of information on convergence of society in diverse social structure” (IC2S2 Helsinki, Finland)
June, 2015

SELECTED HONORS

- Visiting researcher, Perception on minorities in social network June, 2019
- Best oral presentation award on Korean Physical Society Fall Meeting
"Homophily explains perception biases in social networks" October, 2017
- Poster Award Prize on Netsci 2017
"Effect of the perception mechanisms on the Friendship Paradox" June, 2017
- 2017 Bridge Grant
YRNCS(Young Researchers Network on Complex Systems) April, 2017
- Invited researcher and scholarship
EXODASS program, Institute of Molecular Science, Japan Jan, 2013.

TEACHING

- Calculus II in Fall semester of University of North Carolina at Chapel Hill
August, 2018

ACADEMIC REVIEW

- Scientific reports/ Physica A

TRAININGS

- Summer Institute in Computational Social Science
University of Colorado, USA Aug 13-18, 2018
- Workshop of Integrating different perspectives on social learning
Santafe Institute, USA April 16-19, 2018
- Oversea Training
GESIS, Germany
: Collaboration for the biased visibility Jun, 2017
- Shortcourse of complexity
Santafe institute, New Mexico, USA
: Study the interdisciplinary approach of complexity Jan 5 – 7, 2016
- EXODASS program
Institute of Molecular Science, Japan
: Invitation as the East Asian Young Researchers Nov 2 , 2012 – Jan 27, 2013
- Oversea Training
National Taiwan University, Taipei, Taiwan
: Theoretical calculation of the excitation energy transfer Feb 11 -- 26, 2012
- New England Complex Systems Institute Summer School
MIT, USA
: Network theory and simulation study June 13 – 24, 2011
- Oversea Training
Umeå, Sweden
: Network analysis of the core complex July 9 -- Aug 31, 2011

MEDIA

- Santa Fe Institute “It’s not you, it’s the network” [LINK](#)
- Nature Social Science “Our journey through a personal quest: How do social networks shape our perceptions?” [LINK](#)
- 동아사이언스 “타인도 내 의견에 동조한다는 ‘착각’에 숨은 물리학 법칙” (Dong-A Science) [LINK](#)