Sungyong Seo

CONTACT INFORMATION	Computer Science Department RTH 321, 3710 McClintock Ave University of Southern California Los Angeles, CA 90089, USA	*E-mail*: sungyons@usc.edu http://sungyongs.github.io

RESEARCH INTERESTS

Spatio-temporal data mining and learning, Graph-based neural networks, Physics-informed Learning, Time series forecasting

EDUCATION

Ph.D., **University of Southern California**, Los Angeles, CA Aug. 2015 - Present
Computer Science, Advisor: Prof. Yan Liu

M.S., **University of Michigan**, Ann Arbor, MI Sept. 2012 - Dec. 2013
Electrical Engineering, Advisor: Prof. Jay Guo

B.S., **Seoul National University**, Seoul, South Korea Mar. 2005 - Feb. 2012
Electrical and Computer Engineering, Minor in Physics,
Graduated with honors

Nanyang Technological University, Singapore Jan. 2008 - May 2008
TF-NTU LEaRN Program Visiting Student

SELECTED PUBLICATIONS

Conferences

- **Sungyong Seo**, Chuizheng Meng and Yan Liu, Physics-aware Learning for Graph Signal Prediction (Submitted)

- Karishma Sharma, Xinran He, **Sungyong Seo** and Yan Liu, Network Inference from a Mixture of Diffusion Models (Submitted)

- Ashok Deb, Anuja Majmundar, **Sungyong Seo**, Akira Matsui, Rajat Tandon, Shen Yan, Jon-Patrick Allem and Emilio Ferrara, Social Bots for Online Public Health Interventions, *2018 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM) 2018*

- **Sungong Seo**, Arash Mohegh, George Ban-Weiss and Yan Liu, Automatically Inferring Data Quality for Spatiotemporal Forecasting, *6th International Conference on Learning Representations (ICLR) 2018*

- **Sungong Seo**, Hau Chan, P. Jeffrey Brantingham, Jorja Leap, Phebe Vayanos, Milind Tambe and Yan Liu, Partially Generative Neural Networks for Gang Crime Classification with Partial Information, *AAAI/ACM Conference on AI, Ethics, and Society (AIES) 2018* (Oral presentation)

- **Sungyong Seo***, Natali Ruchansky* and Yan Liu, CSI: A Hybrid Deep Model For Fake News Detection, *The 25th ACM International Conference on Information and Knowledge Management (CIKM) 2017* * equally contributed

- **Sungyong Seo**, Jing Huang, Hao Yang and Yan Liu, Interpretable Convolutional Neural Networks with Dual Local and Global Attention for Review Rating Prediction, *Proceedings of the 11st ACM Conference on Recommender Systems (RecSys) 2017*

Workshops and Preprints

- **Sungyong Seo** and Yan Liu, Differentiable Physics-informed Graph Networks, *arXiv preprint 2019*

- **Sungyong Seo**, Umang Gupta, Jiageng Zhu, P. Jeffrey Brantingham and Yan Liu, Contextual Understanding of Homicide Reports in Los Angeles County, *SoCal NLP Symposium 2019*

- **Sungyong Seo**, Jiachen Zhang, George Ban-Weiss and Yan Liu, Data-driven Temporal Attribution Discovery of Temperature Dynamics based on Attention Networks. *The 9th International Workshop on Climate Informatics (CI) 2019*

- **Sungyong Seo** and Yan Liu, Differentiable Physics-informed Graph Networks, *ICLR Workshop Representation Learning on Graphs and Manifolds 2019*

- **Sungyong Seo**, Arash Mohegh, George Ban-Weiss, and Yan Liu, Data Quality Network for Spatiotemporal Forecasting. *Deep Learning for Physical Sciences Workshop at the 31st Conference on Neural Information Processing Systems (DLPS-NIPS) 2017*

- **Sungyong Seo**, Arash Mohegh, George Ban-Weiss, and Yan Liu, Graph Convolutional Autoencoder with Recurrent Neural Networks for Spatiotemporal Forecasting. *The 7th International Workshop on Climate Informatics (CI) 2017*

- **Sungyong Seo**, Jing Huang, Hao Yang, and Yan Liu, Representation Learning of Users and Items for Review Rating Prediction Using Attention-based Convolutional Neural Network, *SDM Workshop on Machine Learning for Recommender Systems (MLRec) 2017*

WORK EXPERIENCE	

Center for Data Science (CDS) at New York University   New York, NY
Visiting Student   Jul. 2019 - Dec. 2019

- Working on graph-based networks for spatiotemporal sequence imputation.

Yahoo! Research   New York, NY
Research Intern   May 2018 - Aug. 2018

- Developed time-series forecasting and clustering models by extracting patterns in internal billing records.

Visa Research   Foster City, CA
Research Intern   Jun. 2016 - Aug. 2016

- Worked with Jing Huang in Data Analytics team on Visa Research. Developed recommendation systems utilizing review on products based on attention CNN.

December and Company   Seoul, South Korea
Software Engineer   Feb. 2015 - Jun. 2015

- Developed software platform for algorithmic trading in stock and derivatives markets. Data preprocessing and analysis for machine trading or robo-advisor.

HONORS AND AWARDS

ICLR Travel Award	May. 2018
NIPS DLPS Workshop Travel Support	Dec. 2017
SIGIR Travel Award, US NSF and SIGWEB Travel Award (CIKM)	Nov. 2017
Travel Fellowship Award to Climate Informatics Workshop	Sep. 2017
USC Annenberg Graduate Fellowship	Aug. 2015 - May 2019
Departmental Fellowship from Electrical Engineering	Jan. 2014 - Apr. 2014
Temasek Foundatdion - NTU LEaRN Scholarship	Jan. 2008 - May 2008
National Science and Technology Scholarship	Mar. 2005 - Dec. 2010