Xindi Wang

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EDUCATION

Ph.D in Network Science, Northeastern University, Boston, MA 2015-Present

- GPA: 4.0/4.0; Advisor: Prof. Albert-László Barabási and Prof. Tina Eliassi-Rad
- Coursework: Complex Networks and Application, Dynamic Processes on Complex Networks, Data Mining Techniques, Computational Statistics, Bayesian & Network Statistics, Network Science Data

B.Eng, University of Electronic Science and Technology of China (**UESTC**), Chengdu, China 2011-2015

- Major: Electronic Engineering and Computer Science. GPA: 3.93/4.0

SKILLS

- Programming Languages: Python (primer language), R, C, Matlab
- Machine learning, Data mining and analysis, Statistics
- Knowledge and extensive experience in complex networks and systems

EXPERIENCE

Applied Scientist, **Amazon**, Boston, MA Summer 2020

- Project: Cross-query ranker on ASR N-best
- Skills involved: Machine Learning, Learning to Rank, Python

Applied Scientist, **Amazon**, Boston, MA Summer 2019

- Project: Entity linking on customer reviews and queries
- Skills involved: Natural Language Processing, Machine Learning, Spark, Python

Research Assistant, **CCNR, Northeastern University**, Boston, MA 2015-Present

- Projects: Success of Books and Authors, Fairness in Machine Learning, Gender Bias in the Art World
- Skills involved: Machine Learning, Data Mining, Algorithm Design, Data Scraping, Python

Computational Social Science Summer School, **University of South California**, Los Angeles, CA Summer 2018

- Project on Cyberbullying in Instagram and won the "Best Project Award"
- Skills involved: Natural Language Processing (NLP), Sentiment Analysis, Python

Complex Systems Summer School, **Santa Fe Institute**, Santa Fe, NM Summer 2018

- A highly selective four week intensive summer school with lectures and project
- Projects: Understanding Music with Higher Order Network, Singapore City Data Analysis
- Skills involved: Network Analysis, Data Mining, Data Processing, Machine Learning, Python, Gephi

Research Intern, **Ryerson University**, Toronto, Canada Summer 2014

- Implemented and improved mathematical model for complex geometric network

Research Assistant, Web Sciences Center, **UESTC**, Chengdu China 2013-2015

- Analyzed Chengdu real-time taxi transportation data (more than 50GB) to understand the transportation pattern of a city

RESEARCH PROJECTS

Gender Bias in the art world

- Using artist exhibition and auction data, revealing gender bias and explaining causes of gender bias in the art world using network science

Success of Books and Authors

- Using various datasource, utilizing machine learning and data mining techniques to understand how books and authors become successful (more than 20,000 books involved)
- Developed a machine learning algorithm *Learning to Place* for heavy-tailed attribute data prediction to predict the book sales prior to its publication, outperformed traditional algorithm such as linear regression by about 20% for high-selling books

Fairness in Machine Learning

- Understanding and aim to seek fairness in current biased machine learning outcomes
- Using COMPAS data and Learning to Place algorithm, propose a novel schema to quantify fairness in data

Understanding Music with Higher Order Network

- Using Music MIDI data and higher order network framework to understand structure and characteristics of different genres of music (classical, jazz and pop) and reverse engineering to identify genre of music pieces
- Genre classification accuracy reached about 80% using features extracted from Higher Order Network

Cyberbullying in Instagram

- Using Natural Language Processing, Sentiment Analysis etc. to understand the relationship between cyberbullying and image content and how cyberbullying developed and disappeared
- Project won the "Best project award" in the Computational Social Science Summer School

PUBLICATIONS AND TALKS

- Success in Books: Prediction of Book Sales, Xindi Wang, Burcu Yucesoy, Onur Varol, Tina Eliassi-Rad, Albert-László Barabási, *EPJ Data Science*, 2019
- L2P: Learning to Place for Estimating Heavy-Tailed Distributed Outcomes, Xindi Wang, Onur Varol, Tina Eliassi-Rad (Under review)
- Success in Books: A Big Data Approach to Bestsellers, Burcu Yucesoy, Xindi Wang, Junming Huang, Albert-László Barabási, *EPJ Data Science*, 2018
- Understanding Music from Symbolic Representation with Higher Order Networks, Xindi Wang, Ricky Laishram (Under preparation)
- "Quantifying Data Bias in U.S. Justice System with Affinity Networks", Xindi Wang, Onur Varol, Tina Eliassi-Rad, *International Conference on Network Science (NetSci)*, Burlington, Vermont, May 2019 (Talk)
- "Learning to Place Objects: A Network-based approach", *International Conference on Complex Networks (CompleNet)*, Boston, Massachusetts, March 2018 (Talk)
- "Success of Books and Authors", *The Central Winter Conference on Network Science (NetSci-X 2018)*, Hangzhou, China, Jan 2018 (Talk)

HONORS AND AWARDS

- Best Project Award of Computational Social Science Summer School '18 2018
- Outstanding Student of University of Electronic Science and Technology of China 2014
  - *Top 10 out of 5500 senior students of UESTC*
- National Scholarship 2014
- Honorable Mention of Interdisciplinary Contest in Modeling 2014
- Tang Lixin Scholarship 2013
  - *Top 50 out of 25000 undergraduate and graduate students of UESTC*
- First Prize in Contemporary Undergraduate Mathematical Contest in Modeling 2013

PERSONAL INTERESTS

Piano, Drawings and Illustrations