

Curriculum Vitae

Huijuan Wang

Work: Delft University of Technology
Faculty of Electrical Engineering
Mathematics and Computer Science
P.O. Box 5031, 2600 GA Delft
tel.: (31)-15-278 88 47
email: H. Wang@tudelft.nl

Personal Information

First Name: Huijuan

Family Name: Wang

Gender: Female

Nationality: Chinese

Languages:

Chinese (native)

English (CEF level C2)

Dutch (CEF level B1)

Education

Delft University of Technology, Electrical Engineering

Degree: Ph.D., Awarded cum Laude (with honors)

Thesis: *Robustness of Networks*

09/2005 – 09/2009

Delft University of Technology, Electrical Engineering

Degree: Master of Science, Awarded cum Laude (with honors)

GPA: 8.7/10

Thesis: *Analysis of the shortest path problem: link weight structure, observability and K shortest paths*

09/2003 – 03/2005

Harbin Engineering University, Electrical Engineering

Degree: Bachelor of Science, Awarded cum Laude (with honors)

GPA: 93/100 Rank: 1/400

Thesis: *Turbo codes decoder*

09/1999 – 07/2003

Work Experience

Delft University of Technology

Associate professor in Multimedia Computing Group, Department of Intelligent Systems
01/2021 – present

Delft University of Technology

Assistant professor in Multimedia Computing Group, Department of Intelligent Systems

(tenured position)
11/2013 – 12/2020

Delft University of Technology

Assistant professor in Network Architecture and Services Group, Department of Intelligent Systems (tenure-track position)
09/2009 – 10/2013

External affiliation and visiting positions

Boston University

Visiting scientist, Department of Physics
Hosted by Prof. H. Eugene Stanley and Prof. Shlomo Havlin.
2011 – 2019

Stanford University

Visiting scientist, Department of Electrical Engineering
Hosted by Prof. Stephen P. Boyd
April - August 2015

Princeton University

Visiting scientist, Department of Electrical Engineering
Hosted by Prof. H. Vincent Poor
April - August 2022

Research Themes

Data collected from generic complex systems can be represented in the form of networks, ranging from online social networks, physical contact networks to critical infrastructures. My team focuses on Network Data Science and aims to develop methodologies to predict, model and control processes (such as information, disease, failure propagation and social or financial contagion) on networks combining network and data science approaches.

The prediction problems addressed include the prediction of late payment of invoices, performance of companies in the network of monetary transactions among companies and the prediction of outbreak size of information/epidemic spreading.

Modeling and Control: We have developed methodologies to understand how the underlying interdependent and time-evolving network influences a dynamic process on the network. Such understanding enables the optimization of network topology to be robust against virus and failure propagation or efficient in information diffusion. Furthermore, strategies to mitigate the spread of epidemics/information via e.g. blocking network connections and have been developed. Currently, we are addressing the additional complexity, the higher-order (group interaction) and time-evolving nature of networks, especially the problem of predicting and modelling of such networks.

Our ambition is to discover the underlying mechanism or process of a complex social-physical system that we don't understand. Such interpretation of data to the extent that we could further optimize the system is deemed as the fore-runner of AI-Networking. This ambition is being pursued via our current projects like NOW-TOP and KPN-TU Delft AI Networking and NWO-KIC Fort-Port project. We focus on application domains such as financial, social, urban systems, criminal organization and critical infrastructures (telecommunications and traffic networks).

National and International Academic Activities

Grants and Projects (selected)

2023 - 2028	NWO-KIC FORT-PORT Focusing On the Right Things in the Port of Rotterdam (PI, 664K/3.6M EUR)
2018 - 2022	NWO-TOP2 Interacting Spreading Processes on Interdependent Social Networks (PI, 249KEUR)
2018 - 2023	KPN-TUdelft NExTWORK: AI-Networking Combining Data and Network Science (PI, 314KEUR)
2012 - 2015	EU FP7-FET CONGAS: Dynamics and coevolution in multi-level strategic interaction games (PI, work package leader, 340KEUR/2.6MEUR, Final Review Excellent)
2011 - 2015	EU FP7-ICT Network of Excellence in Internet Science
2009 - 2012	Next Generation Infrastructures foundation on Robustness and Optimisation of Complex Networks (funded my Sabbatical at Boston University)
2006 - 2009	EU NoE CONTENT European Network of Excellence on content distribution
2005 - 2009	NWO - GLANCE: Robunet: Robustness of Large Networks (funded my PhD)
2010 - present	Chinese Scholarship Council CSC has funded 6 of my PhD students working on fundamental research.

Community Services (selected)

<u>Co-Founder and Co-Chair</u>	Dutch Network Science Society
<u>Chair</u>	Netherlands Platform of Complex Systems (2021-2022)
<u>Board Member</u>	The Network Science Society (2019 - present)
<u>Editorial Board Member</u>	Scientific Report by Nature
<u>Co-Editor</u>	Special issue of Journal Computational Social Networks on Complex Networks 2017
<u>Reviewer for journals</u>	IEEE/ACM Transactions on Networking; IEEE Transactions on Control of Network Systems; IEEE Transactions on Cybernetics; IEEE Transactions on Network Science and Engineering; Scientific Report; Computer Networks Journal; Europhysics Letters; New Journal of Physics; Applied Mathematics and Computation.
<u>PhD committee Member</u>	Loes Crielaard, University of Amsterdam 2023; Merve Alanyali, University of Warwick, 2018; Edgar van Boven, Delft University of Technology, 2013; Javier Martín Hernández, Delft University of Technology, 2013.

Collaborations (selected)

2011-2019 Prof. H. Eugene Stanley, Boston University (USA).

Since 2011 Prof. Shlomo Havlin, Bar-Ilan University (Israel).

Since 2020 Prof. Petter Holme, Aalto University (Finland).

2012-2015 Prof. Eitan Altman, INRIA (France).

2013-2014 Prof. Lidia A. Braunstein, Mar del Plata University (Argentina).

Since 2013 Prof. Daqing Li, Beihang University (China).

2011-2014 Dr. Gregorio D’Agostino, ENEA, “Casaccia” Research Center (Italy).

2008-2011 Prof. C.J. Stam, Amsterdam University Medical Centers (Netherlands).

Invited talks and keynotes (selected)

- 2023 Temporal Network Prediction and Interpretation, Workshop on Epidemic Spreading, Girona ([invited talk](#))
- 2020 Prediction and Mitigation of Epidemic Spreading, DBSS and EuroSim Symposium The Use of Simulation for Calamity Analysis, Virtual ([keynote talk](#))
- 2019 Data Analysis and Modeling in Complex Networks, ICMS Outreach Symposium, Eindhoven ([keynote talk](#))
- 2018 Modeling of Social Contagion, International Workshop on Social Influence Analysis and Mining Actionable Insights from Social Networks, Stockholm ([keynote talk](#))
- 2016 Epidemic Mitigation via Awareness Propagation in Communications Network: the Role of Time Scale, Workshop on Frontiers of Network Science covering both Theory and Applications, Shanghai ([invited talk](#))
- 2015 Heterogeneous Recovery Rates against SIS Epidemics in Directed Networks, Boston University, Boston ([invited talk](#)).
- 2013 Effect of the Interconnected Network Structure on the Epidemic Threshold, Networks of Networks satellite in NetSci 2013, Copenhagen ([invited talk](#)) and NATO Advanced Research Workshop on New Challenges in Complex System Physics: Disaster Forecasting, Crisis Modeling and Sustainable Development, Samarkand ([keynote talk](#)).
- 2011 Application Oriented Network Science, Kansas State University, Manhattan, USA ([invited talk](#)).
- 2011 Dynamics in networks characterised by spectral radius, Workshop on Frontiers in Multi-scale Computational Modeling for Zoonotic Epidemics, Kansas City ([invited talk](#)).

Organisation of conferences and workshops (selected)

- [Co-organizer](#) Symposium of the Dutch Network Science Society, 2019 and 2023.
- [Satellite Chair](#) NetSci 2022
- [Lightning Chair](#) Complex Networks 2018-2023: International Workshop on Complex Networks and their Applications.
- [Poster Chair](#) Complex Networks 2017: International Workshop on Complex Networks and their Applications.
- [Co-organizer](#) 6th IFIP International Workshop on Self-Organizing Systems, 2012
- [Co-organizer](#) International Workshop on Modelling, Analysis, and Control of Complex Networks (Cnet 2011), co-located with the 23rd International Teletraffic Congress, 2011.
- [Co-Chair](#) Workshop on Robustness of Complex Networks, 2010

Supervision and Teaching

Supervision of PhD Students as the (co)promotor or daily supervisor

1. Tianrui Mao (Delft University of Technology, promotor), High-order temporal networks.
2. Shilun Zhang (Delft University of Technology, promotor), Nodal influence in spreading processes.
3. Omar Fernández Robledo (Delft University of Technology, promotor), AI-Networking Combining Data and Network Science.
4. Alberto Ceria (Delft University of Technology, promotor, defence in Dec. 2023), Interacting Spreading Processes on Interdependent Social Networks.
5. Li Zou (Delft University of Technology, promotor), Network Embedding.
6. TongJing Wang (Delft University of Technology, copromotor), City network and Urbanization Evolution.
7. Xiuxiu Zhan (Delft University of Technology, copromotor, graduated in Oct. 2020), Information Diffusion on Temporal Networks.
8. Dr. Bo Qu (Delft University of Technology, copromotor, graduated in Sep. 2017), Dynamic Processes on Complex Networks: The role of Heterogeneity.
9. Dr. Cong Li (Delft University of Technology, copromotor, graduated in Oct. 2014), Characterisation and Design of Complex Networks.
10. Dr. Wynand Winterbach (Delft University of Technology, daily supervisor, graduated in Mar. 2014), Topology of Molecular Networks.
11. Dr. Jil Meier (Delft University of Technology, daily supervisor, graduated in May 2017), The Relation between Structure and Function in Brain Networks.
12. Dr. Javier Martín Hernández (Delft University of Technology, daily supervisor, graduated in Oct. 2013), Measuring Robustness of Complex Networks.

Supervision of visiting PhD Students

1. Lingbo Li (Beijing Normal University, currently visiting TUDelft), Network Embedding of Signed Networks.
2. Cunquan Qu (Shandong University, supervisor during his two years' visit at TUDelft), Dynamic Processes on Signed Networks.
3. Dr. Liang Liu, (National University of Defense Technology, supervisor during his one year's visit at TUDelft), Networked Data Analysis in Online social Networks.
4. Dr. Qian Li, (Boston University, supervisor since my visit at Boston on two journal publications), Social Models on Complex Networks and Econophysics.
5. Dr. Xin Ge (DaLian Maritime University, supervisor during his two years' visit at TUDelft), Network Characterisations at micro and macro scales.

Supervision of Master Students

I have the pleasure to have supervised the master thesis projects of the following students: Andreas Christian Pangaribuan, Xuehan Jiang, Tong Yang, Chongze Jiao, Bjarni Thor Arnason, Boning Li, Qiankun Yu, Javier Martin Hernandez, Tiaotian Dong, Chuyi Chen (cum laude), Yuan Ren and Mari Carmen Sanchez, Dionysis Nikolopoulos, Ziyu Li, Chitra Balasubramanian and Artur Hovanesyan, Lorena Poenaru-Olaru, Bastijn Kostense, Lennart Overdevest, Rommy Virindra Gobardhan, Tianrui Mao, Tim Bruyn, Mathieu Jung-Muller (cum laude), Yuhui Jin (cum laude), Stas Mironov, Varnika Srivastava, Csanád Bakos, Louise Leibbrandt.

Courses

2020 - present Responsible teacher of Bachelor Software Projects (CSE2000).

2016 - present Responsible teacher of MSc course: Modelling and Data Analysis in Complex Networks (CS4195).

2016 - 2021 Coordinator of Bachelor End Projects for Computer Science and Engineering (TI3806).

2011 - 2016 Responsible teacher of MSc course: Complex Networks - from Nature to Man-made Networks (ET4389)

2009 - 2013 Co-lecturer of MSc course: Performance Analysis of Complex Networks and Systems (IN4341)

2006 - 2009 Teaching assistant of Msc course: Performance Analysis of Complex Networks and Systems (IN4341)

2006 - 2009 Mentor of the Laboratory experiments for MSc course: Advances in Networking (ET4359)

University Service (TU Delft)

Chair Board of Examiners CS/ES (2019-2023)

Chair Selection Committee Numerus Clausus BSc CSE (2019-2020)

Member EEMCS Faculty Board of Examiners (2019-2023)

Member Board of Examiners CS/ES (07/2017-05/2019)

Member Selection Committee Numerus Clausus BSc CSE (2018-2019)

Member Board of Studies CS (2013-2015)

Mentor Graduate school PhD students

Mentor BSc Computer Science and Engineering students

Media Exposure

Decoding social contagion with the help of network data science, ICMS Highlights, Edition12, May, 2019.

Een maat voor 'sterke' netwerken, I/O ICT-onderzoek, november, 2009.