

# Curriculum Vitae

## Huijuan Wang

Work: Delft University of Technology  
Faculty of Electrical Engineering  
Mathematics and Computer Science  
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### Personal Information

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**First Name:** Huijuan

**Family Name:** Wang

**Gender:** Female

**Nationality:** Chinese

**Languages:**

Chinese (native)

English (CEF level C2)

Dutch (CEF level B1)

### Education

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**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

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**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**

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### **Boston University**

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

### **Stanford University**

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

## **Research Themes**

**Fundamental network theory** Systematic, theoretic and empirical analysis of the non-trivial relation between network (centrality) metrics that describe different network (nodal) properties. Providing the guidelines with respect to which metrics should be used to characterize networks representing diverse complex systems.

**Dynamic processes on interdependent networks** Exploring dynamic processes such as opinion interactions, epidemic spreading and synchronisation on interdependent networks. Combining mathematical and statistical physics approaches to understand the influence of the network topology on emergent properties such as the prevalence of epidemics/opinion.

**Heterogeneous dynamic processes on heterogeneous networks** Investigating the effect of the heterogeneity in a dynamic process (heterogeneous infection and recovery rates, time evolving recovery rates) on emergent properties.

**Social contagion on interdependent networks** Modelling of the realistic contagion mechanisms of user activities on interdependent networks and providing foundational understanding of their emergent effect.

**AI-Networking Combining Data and Network Science** Automatic recommendation of operation choices to network/system components (e.g. which content, service, or resource to allocate) when the system is subject to heterogeneous and dynamic user demand.

## National and International Academic Activities

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### Grants and Projects (selected)

2018 - 2022	NWO-TOP2 Interacting Spreading Processes on Interdependent Social Networks (PI, 249KEUR)
2018 - 2023	KPN-TU Delft 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 4 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
<u>Board Member</u>	The Network Science Society
<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>	Merve Alanyali, University of Warwick, 2018; Edgar van Boven, Delft University of Technology, 2013; Javier Martín Hernández, Delft University of Technology, 2013.

### **Collaborations (selected)**

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

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

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)**

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    Opening Symposium of the Dutch Network Science Society, 2019.
- Lightning Chair Complex Networks 2020, 2019 and 2018: 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

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### Supervision of PhD Students as the copromotor or daily supervisor

1. Omar Fernández Robledo (Delft University of Technology, copromotor), AI-Networking Combining Data and Network Science.
2. Alberto Ceria (Delft University of Technology, copromotor), Interacting Spreading Processes on Interdependent Social Networks.
3. Li Zou (Delft University of Technology, copromotor), Network Embedding.
4. TongJing Wang (Delft University of Technology, copromotor), City network and Urbanization Evolution.
5. Xiuxiu Zhan (Delft University of Technology, copromotor, defence scheduled on 7th Oct. 2020), Information Diffusion on Temporal Networks.
6. Dr. Bo Qu (Delft University of Technology, copromotor, graduated in Sep. 2017), Dynamic Processes on Complex Networks: The role of Heterogeneity.
7. Dr. Cong Li (Delft University of Technology, copromotor, graduated in Oct. 2014), Characterisation and Design of Complex Networks.
8. Dr. Wynand Winterbach (Delft University of Technology, daily supervisor, graduated in Mar. 2014), Topology of Molecular Networks.
9. Dr. Jil Meier (Delft University of Technology, daily supervisor, graduated in May 2017), The Relation between Structure and Function in Brain Networks.
10. 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**

In total, 17 master students have been successfully supervised and 5 are currently working on their thesis projects.

### **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 (since 06/2019)

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

Member EEMCS Faculty Board of Examiners (since 06/2019)

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.