

## Wang Yibing, Ph.D



Name: Wang Yibing

Job title: Professor, doctoral tutor

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### Personal profile:

Wang Yibing, male, Zhejiang University School of architecture professor, doctoral tutor. Graduated with a Ph.D from Tsinghua University in 1998, from 1999 - 2007 worked as scientific researcher in Europe, from 2007 - 2013 taught at the Department of Civil Engineering of Monash University, Australia, joined Zhejiang University in 2013. Dr. Wang's **main research area** is intelligent transportation systems, especially road traffic system modeling, monitoring, optimization and control. **Specific research directions** include: dynamic traffic modeling and simulation, road network traffic monitoring, urban network traffic signal control, freeway on-ramp control and speed control, real-time network path induction, autonomous vehicle communication networks. His research work was supported by the European Union, the Australian Science Council, the Director of Public Works and Water Management of the Netherlands Ministry of Transport, the Ministry of Transport of Victoria, Australia, the Antwerp Traffic Command Center, the Italian Traffic Command Center, and the Zhejiang Provincial Government. Dr.Wang has published nearly 100 academic papers,

including nearly 30 papers included in SCI . He currently serves as editor-in-chief of two world-class academic journals and has served as chairman of the International Conference on Procedures.

**learning experience:**

1986 - 1990: Department of Electronics, Sichuan University, received bachelor 's degree;

1990 - 1993: Department of Automation, Chongqing University, received master's degree;

1994 – 1998: Department of Automation, Tsinghua University, received doctorate.

**Work experience:**

1999 – 2001: Technical University of Crete, Department of Industrial Engineering and Management, Post-doc;

2001 – 2007: Technical University of Crete, Department of Industrial Engineering and Management, Senior Research Fellow;

2007 – 2013: Department of Civil Engineering, Monash University, Senior Lecturer, PhD supervisor;

2013 – Present: School of Architecture and Engineering, Zhejiang University, Professor, doctoral tutor.

**Academic appointments:**

1. IEEE Transactions on Intelligent Transportation Systems, **Deputy Editor** (2006 – Present) ;

2. Transportation Research Part C: Emerging Technologies, **Editor/Deputy Editor** (2005 - Present) ;
3. The Traffic Flow Theory Committee of the Transportation Research Board (TRB), the US National Academy, Member (2013 - Present) ;
4. The IFAC (International Federation of Automatic Control) Technical Committee on Transportation Systems, Member (2008 - Present) ;
5. The Advisory Committee of the European Project NEARCTIS (Network of Excellence for Advanced Road Cooperative Traffic management in the Information Society), Member (2009 - 2013) ;
6. The 9th IEEE International Conference on Intelligent Transportation Systems (Toronto, Canada, 2006), Organizational Committee
7. The 13th IEEE International Conference on Intelligent Transportation Systems (Madeira Island, Portugal, 2010), Organizational Committee

#### **Recent Research:**

1. An Innovative Mechanism for Optimising Freeway Traffic Efficiency, Safety, and Sustainability via Variable Speed Limit Control, 2013 - 2016, Australian Scientific Committee Discovery Project.
2. Highway transportation modeling and control of advanced theories and methods, 2013-2018, Zhejiang Province, a hundred talents program.

#### **Representative papers :**

1. Wang, Y., E. Kosmatopoulos, M. Papageorgiou, I. Papamichail. Local Ramp Metering in the Presence of a Distant Downstream Bottleneck: Theoretical Stability Analysis. Accepted by *IEEE Transactions on Intelligent Transportation Systems*, 2013.

2. Wang, Y., J. Guo, A. Ceder, G. Currie, Y. Hao. Waiting for Public Transport Services: Queueing Analysis with Balking and Reneging behaviour of Impatient Passengers. Accepted by *Transportation Research Part B*, 2013.
3. Wang, Y., J. Guo, G. Currie, A. Ceder, B. Pender, Y. Hao. Bus Bridging Disruption in Rail Service with Frustrated Passengers. Accepted by *IEEE Transactions on Intelligent Transportation Systems*, 2013.
4. Tympakianaki, A., A. Spiliopoulou, A. Kouvelas, Y. Wang, I. Papamichail, M. Papageorgiou. Real-Time Merging Traffic Control for Throughput Maximization at Motorway Work Zones. Accepted by *Transportation Research Part C*, 2013.
5. Aghabayk, K., S. Moridpour, W. Young, Y. Wang. An Analytical Comparison between Lane-Changing Behaviour of Drivers on Freeways and Arterial Roads. *Road & Transport Research: A Journal of Australian and New Zealand Research and Practice*, vol. 22, No 2, 2013, pp. 27-39.
6. Wang, Y., L. Zhang, D. Chin, M. Papageorgiou, G. Rose, W. Young. Speed Modelling and Travel Time Estimation based on Truncated Normal and Lognormal Distributions. *Transportation Research Record: Journal of the Transportation Research Board*, No. 2315, 2012, pp. 66-72.
7. Pender, B., G. Currie, A. Delbosc, Y. Wang. Proactive Recovery from Rail Disruptions Through Provision of Track Crossovers and Bus Bridging. *Transportation Research Record: Journal of the Transportation Research Board*, No. 2275, 2012, pp. 68-76.
8. Aghabayk, K, S. Maridpour, W. Young, Y. Wang, M. Sarvi. Comparing Heavy Vehicle and Passenger Car Lane Changing Maneuvres on Arterial Roads and Freeways. *Transportation Research Record: Journal of the Transportation Research Board*, No. 2260, 2011, pp. 94-101.
9. Wang, Y., P. Coppola, A. Messmer, A. Tzimitsi, M. Papageorgiou, A. Nuzzolo. Real-Time Freeway Network Traffic Surveillance: Large-Scale Field Testing in Southern Italy, *IEEE Transactions on Intelligent Transportation Systems*, vol. 12, 2011, pp. 548-562.
10. Ukkusuri, S., Wang, Y, Chigan, T. Guest Editorial for Special Issue on Exploiting Wireless Communication Technologies in Vehicular Transportation Networks. *IEEE Transactions on Intelligent Transportation Systems*, vol. 12, 2011, pp. 633-634

11. Wang, Y., M. Papageorgiou, J. Gaffney, I. Papamichail, G. Rose, W. Young. Local Ramp Metering in the Presence of Random-Location Bottlenecks Downstream of a Metered On-Ramp, *Transportation Research Record: Journal of the Transportation Research Board*, No. 2178, 2010, pp. 90–100.
12. Papageorgiou, M., I. Papamichail, A. Messmer, and Y. Wang. Traffic Simulation with MATANET. In *Fundamentals of Traffic Simulation*, edited by Jaume Barcelo, International Series in Operation Research & Management Science, Springer, Volume 145, 2010, pp. 399-430.
13. Papageorgiou, M., I. Papamichail, and Y. Wang. The Role of Macroscopic Modeling in Simulation, Surveillance and Control of Motorway Network traffic. In *Transport Simulation – Beyond Traditional Approaches*, edited by Edward Chung and Andre-Gilles Dumont, the EPFI Press, 2009, pp. 3-25.
14. Wang, Y., M. Papageorgiou, A. Messmer, P. Coppola, A. Tzimitsi, and A. Nuzzolo. An Adaptive Freeway Traffic State Estimator. *Automatica* (Regular Paper), vol. 45, 2009, pp. 10-24.
15. Papageorgiou, M., E. Kosmatopoulos, I. Papamichail, and Y. Wang. A Misapplication of the Local Ramp Metering Strategy ALINEA. *IEEE Transactions on Intelligent Transportation Systems*, vol. 9, 2008, pp. 360-365.
16. Vigos, G., M. Papageorgiou, and Y. Wang. Real-Time Estimation of Vehicle-Count within Signalized Links. *Transportation Research C*, vol. 16, 2008, pp. 18-35.
17. Wang, Y., M. Papageorgiou, and A. Messmer. Real-Time Freeway Traffic State Estimation based on Extended Kalman Filter: Adaptive Capabilities and Real Data Testing. *Transportation Research Part A*, vol. 42, 2008, pp. 1340-1358.
18. Nunes, U., Rakha, H., Wang, Y., Lee, D.-H. Guest Editorial for Special Issue on ITSC2006. *IEEE Transactions on Intelligent Transportation Systems*, vol. 9, no. 1, 2008, pp. 1-4
19. Wang, Y., M. Papageorgiou, and A. Messmer. Real-Time Freeway Traffic State Estimation based on Extended Kalman Filter: A Case Study. *Transportation Science*, vol. 41, 2007, pp. 167-181.
20. Papageorgiou, M., I. Papamichail, and Y. Wang. Motorway Traffic Surveillance and Control. *European Journal of Control*, vol. 13, 2007, pp. 297-319.

- 21.Wang, Y., M. Papageorgiou, and A. Messmer. Investigations on the Adaptive Features of a Real-Time Nonlinear Freeway Traffic State Estimator. *Nonlinear Dynamics*, vol. 49, 2007, pp. 511–524.
- 22.Papageorgiou, M., E. Kosmatopoulos, I. Papamichail, and Y. Wang. ALINEA Maximizes Motorway Throughput – An Answer to Flawed Criticism. *Traffic Engineering & Control*, vol. 48, 2007, pp. 271-276.
- 23.Wang, Y, C. Diakaki, A. Kotsialos, M. Papageorgiou. Towards Integrated Network Traffic Control. In *Modeling, Information, and Control of Intelligent Transportation Systems* (in French), Hermes Science Publishing Ltd, UK, 2007, pp. 281-313.
- 24.Wang, Y., M. Papageorgiou, and A. Messmer. A Real-Time Freeway Network Traffic Surveillance Tool. *IEEE Transactions on Control Systems Technology*, vol. 14, 2006, pp. 18-32
- 25.Wang, Y., M. Papageorgiou, and A. Messmer. RENAISSANCE--A Unified Macroscopic Model Based Approach to Real-Time Freeway Network Traffic Surveillance. *Transportation Research C*, vol. 14, 2006, pp. 190–212.
- 26.Wang, Y., M. Papageorgiou, G. Sarros, and W. J. Knibbe. Feedback Route Guidance Applied to a Large-Scale Urban Express Ring Road. *Transportation Research Record: Journal of the Transportation Research Board*, No. 1965, 2006, pp.79-88.
- 27.Wang, Y., M. Papageorgiou, and A. Messmer. Macroscopic Model-Based Real-Time Surveillance of Motorway Network Traffic. In *Modélisation du Trafic - Actes du Groupe de Travail 2003*, Actes INRETS, Paris, France, 2006, pp. 41-56.
- 28.Papageorgiou, M., M. Ben-Akiva, Y. Wang, J. Bottom, A. Kotsialos. Dynamic Traffic Management. In *2006 McGRAW-HILL YEARBOOK of Science & Technology*. McGRAW-HILL, 2006, pp. 107-110.
- 29.Wang, Y., and M. Papageorgiou. Real-Time Freeway Traffic State Estimation based on Extended Kalman Filter: A General Approach. *Transportation Research B*, vol. 39, 2005, pp. 141-167
- 30.Wang, Y., M. Papageorgiou, and A. Messmer. Real-Time Motorway Network Traffic Surveillance Tool RENAISSANCE. In *Traffic and Granular Flow'03*. Berlin, Heidelberg: Springer-Verlag, 2005, pp. 295-304.

31. Papageorgiou, M., Y. Wang, and A. Messmer. RENAISSANCE in Motorway Surveillance (*invited paper*). *ITS International*, vol. 11, 2005, Issue 4 (July/August), pp. 55-56.
32. Papageorgiou, M., C. Diakaki, V. Dinopoulou, Y. Wang, and A. Kotsialos. Review of Road Traffic Control Strategies. *Proceedings of the IEEE*, vol. 91, 2003, pp. 2043-2067.
33. Wang, Y., M. Papageorgiou, and A. Messmer. A Predictive Feedback Routing Control Strategy for Freeway Network Traffic. *Transportation Research Record: Journal of the Transportation Research Board*, No. 1856, 2003, pp. 62-73.
34. Wang, Y., A. Messmer, and M. Papageorgiou. Freeway Network Simulation and Dynamic Traffic Assignment using METANET Tools. *Transportation Research Record: Journal of the Transportation Research Board*, No. 1776, 2001, pp. 178-188.