



TECHNICAL PROGRAM

Tenth International Conference on Ad Hoc Networks

September 20 - 23, 2018, Cairns, Australia

<http://www.adhocnets.org/>



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MESSAGE FROM GENERAL CHAIR



On behalf of the organizing committee, it is my great pleasure to welcome you all to the 10th International Conference on Ad Hoc Networks, which will be held in Cairns, Australia, on September 20-23, 2018.

The annual International Conference on Ad Hoc Networks (AdHocNets) is an event that aims at providing a forum that brings together researchers from academia as well as practitioners from industry to meet and exchange ideas and recent research work on all aspects of ad hoc networks. AdHocNets 2018 is the tenth edition of this event. The conference will present you an interesting technical program consisting of one keynote speech and seven technical sessions. The keynote speech will be delivered by Prof. Guoqiang Mao from University of Technology Sydney (UTS), Australia, who is a leading researcher in the area of ad hoc networks. The technical sessions will present original research results in the area of ad hoc networks.

I would like to take this opportunity to thank all the organizing committee members for their enthusiastic and great contributions to organizing this event. Without their great efforts, this conference would not have been possible. I would also like to thank all the authors who have submitted their papers and contributed their recent research results to this conference. Many thanks go to all the EAI staff for their active support and assistance during the entire process of organizing the event.

The city of Cairns offers visitors a plethora of attractions and sighting opportunities. In particular, the Great Barrier Reef is one of the most amazing and spectacular natural landscapes in the world, which truly exceeds the imagination of today's leisure and business visitors. I hope that you will enjoy the technical program and your time at the conference. I also hope that you will take the opportunity to enjoy the amazing scenery of the Great Barrier Reef, visit the city of Cairns, and have a wonderful and memorable stay in Cairns.

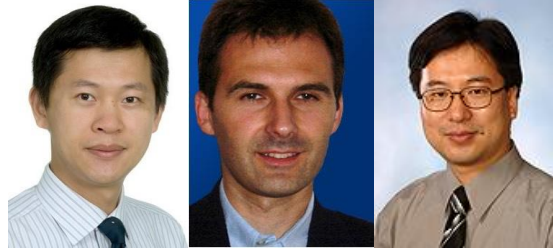
We look forward to welcoming you at AdHocNets 2018 in Cairns.

Jun Zheng

AdHocNets 2018 General Chair

MESSAGE FROM TECHNICAL PROGRAM COMMITTEE

CO-CHAIRS



On behalf of the technical program committee, we are pleased to welcome you to the Tenth International Conference on Ad Hoc Networks (AdHocNets 2018) to be held in Cairns, Australia. Following the great success of AdHocNets 2009-2017, AccessNets 2018 will again present you an exciting technical program consisting of keynote speeches and technical sessions.

We received totally 50 submissions from many parts of the world, including Europe, North America, Australia, and Asia. After a rigorous review process, 27 regular papers have been included in the technical program. The technical program consists of 1 keynote talk and 7 technical sessions, which present recent advances in various aspects of ad hoc networks. In particular, the program features one keynote address on “A Topological Approach to Secure Message Dissemination in Vehicular Ad-Hoc Networks” by Prof. Guoqiang Mao from the University of Technology Sydney, Australia.

The technical program would not have been possible without the help of all the TPC members and external reviewers who volunteered their time and professional expertise. We would like to take this opportunity to thank all of them for their help. We would also like to thank all the authors for contributing their quality work, and our sponsors and partners for their support.

Finally, we hope you will enjoy the technical program and wish you all a pleasant stay at the conference and enjoy the beautiful sceneries that Cairns has to offer.

Wei Xiang, Pascal Lorenz, and Shiwen Mao
AdHocNets 2018 Program Chairs

KEYNOTE SPEECH

A Topological Approach to Secure Message Dissemination in Vehicular Ad-Hoc Networks



Dr. Guoqiang Mao

Professor and IEEE Fellow

University of Technology Sydney (UTS), Australia

Abstract

Secure message dissemination is an important issue in vehicular ad-hoc networks, especially considering the vulnerability of vehicle-to-vehicle (V2V) message dissemination to malicious insider attacks. Traditional security mechanisms, largely based on message encryption and key management, are inadequate in such an environment where vehicles frequently exchange information with other “stranger” vehicles they never meet before. In this talk, I will present our recent work on secure message dissemination considering the topological impact of vehicular networks. By incorporating the underlying network topology information, we proposed an optimal decision algorithm that was able to maximize the chance of making a correct decision on the message content, assuming the prior knowledge of the percentage of malicious vehicles in the network. Furthermore, a heuristic decision algorithm was developed that removed the need to know the aforementioned percentage of malicious vehicles, which could be difficult to estimate. Simulations were conducted which demonstrated that the proposed algorithms could achieve much better performance than existing algorithms that did not consider or only partially consider the topological information. This work sheds light on the optimum algorithm design for secure message dissemination.

Biography

Guoqiang Mao received PhD in telecommunications engineering in 2002 from Edith Cowan University, Australia. He was with the School of Electrical and Information Engineering, the University of Sydney between 2002 and 2014. He joined the University of Technology Sydney in February 2014 as Professor of Wireless Networking and Director of Center for Real-time Information Networks. He has published over 200 papers in international conferences and journals, which have been cited around 6,500 times. He is an editor of the IEEE Transactions on Intelligent Transportation Systems, IEEE Transactions on Wireless Communications, IEEE Transactions on Vehicular Technology and received “Top Editor” award for outstanding contributions to the IEEE Transactions on Vehicular Technology in 2011, 2014 and 2015. He is a co-chair of IEEE Intelligent Transport

Systems Society Technical Committee on Communication Networks. He has served as a chair, co-chair and TPC member in a large number of international conferences. His research interest includes intelligent transport systems, applied graph theory and its applications in telecommunications, Internet of Things, next generation mobile communication systems, and wireless localization techniques. He is a Fellow of IEEE and IET.

TECHNICAL PROGRAM AT A GLANCE

Thursday, September 20 2018

16:00pm-18:00pm Registration

Friday, September 21 2018

8:00am – 09:00am Registration

09:00am - 09:30am Welcome and Opening Addresses

09:30am - 10:30am Keynote Speech

10:30am - 11:00am Coffee Break

11:00am - 12:30pm Session 1: Ad Hoc Networks

12:30pm - 14:00pm Lunch Break

14:00pm - 15:30pm Session 2: Resource Allocation

15:30pm - 16:00pm Coffee Break

16:00pm - 17:30pm Session 3: Routing and Network Planning

18:30pm - 20:00pm Gala Dinner

Saturday, September 22 2018

09:00am - 10:30am Section 4 : Localization and Tracking

10:30am - 11:00am Coffee Break

11:00am - 12:30pm Session 5: Handover, Scheduling, and Action Recognition

12:30pm - 14:00pm Lunch Break

14:00pm - 15:30pm Session 6: Security

15:30pm - 16:00pm Coffee Break

16:00pm - 17:30pm Session 7: Miscellaneous Topics in Wireless Networks

18:00pm - 19:00pm Dinner

TECHNICAL PROGRAM

Friday, September 21, 2018

Friday, September 21, 2018 09:00am - 09:30am

Room: Terrace

Welcome and Opening Addresses

General Chair: Dr. Jun Zheng, Southeast University, China

TPC Co-Chair: Dr. Wei Xiang, James Cook University, Australia

Friday, September 21, 2018 09:30am - 10:30am

Room: Terrace

Keynote Speech: **A Topological Approach to Secure Message Dissemination in Vehicular Ad-Hoc Networks**

Prof. Guoqiang Mao, Professor and IEEE Fellow
University of Technology Sydney (UTS), Australia

10:30am - 11:00am

Coffee Break

Friday, September 21, 2018 11:00am - 12:30pm

Room: Terrace

Session 1: Ad Hoc Networks

Chair: Wei Xiang, James Cook University, Australia

1. Task Assignment for Semi-Opportunistic Mobile Crowdsensing

Wei Gong, Baoxian Zhang, University of Chinese Academy of Sciences, China; Cheng Li, Memorial University, Canada

2. Caching on Vehicles: A Lyapunov based Online Algorithm

Yao Zhang, Changle Li, Tom Luan, Yuchuan Fu, Lina Zhu, Xidian University, China

3. Simplicial Complex Reduction Algorithm for Simplifying WSN's Topology

Wenyu Ma, Feng Yan, Southeast University, China; Xuzhou Zuo, University of Electronic Science and Technology of China, China; Jin Hu, 724 Research Institute of CSIC, China; Weiwei Xia, Lianfeng Shen, Southeast University, China

12:30pm - 14:00pm

Lunch: Atrium Restaurant

Friday, September 21 2018 14:00pm - 15:30pm

Room: Terrace

Session 2: Resource Allocation

Chair: Billard David, University of Applied Sciences Western Switzerland in Geneva, Switzerland

1. Resource Allocation Scheme for D2D Communication based on ILA

Zhifang Gu, Pingping Xu, Guilu Wu, Hao Liu, Southeast University, China

2. Content Aware Resource Allocation for Video Service Provisioning in Wireless Networks

Yongxiang Zhao, Yunpeng Song, Chunxi Li, Beijing JiaoTong University, China

3. A Power Allocation Algorithm for D2D-direct Communication in Relay Cellular Networks

Chenguang He, Wenbin Zhang, Weixiao Meng, Yuwei Cui, China

4. A Joint Power Control and Cooperative Transmission Scheme in Random Networks

Dan Zhang, Xin Su, Lu Ge, Jie Zeng, Bei Liu, Xiangyun Zheng, Tsinghua University, China

15:30pm - 16:00pm

Coffee Break

Friday, September 21 2018 04:00pm - 05:30pm

Room: Terrace

Session 3: Routing and Network Planning

Chair: Pingping Xu, Southeast University, China

1. An Energy-Efficient Distributed Routing Protocol for Wireless Sensor Networks with Mobile Sinks

Hengyi Wen, Tao Wang, University of Chinese Academy of Sciences, China; Daren Zha, Institute of information engineering of Chinese Academy of Sciences, China; Baoxian Zhang, University of Chinese Academy of Sciences, China

2. Asymptotical Performance of Ring based Routing for Wireless Sensor Networks with A Mobile Sink: An Analysis

Sheng Yu, Baoxian Zhang, University of Chinese Academy of Sciences, China; Chunxi Li, Beijing JiaoTong University, China; Kun Hao, Cheng Li, Tianjin Chengjian University, China

3. Energy Efficient-based Splitting for MPTCP in Heterogeneous Networks

Huanxi Cui, Xin Su, Jie Zeng, Bei Liu, Tsinghua University, China

4. RPMA Low-Power Wide-Area Network Planning Method based on Data Mining

Yao Shen, Xiaorong Zhu, Yue Wang, Nanjing University of Posts and Telecommunications, China

18:30pm - 20:00pm

Gala Dinner: Tha Fish Restaurant

Saturday, September 22 2018

Saturday, September 22 2018 09:00am - 10:30am

Room: Terrace

Section 4: Localization and Tracking

Chair: Song Xing, California State University, USA

1. Mobility Assisted Wireless Sensor Network Cooperative Localization via SOCP

Sijia Yu, University of Electronic Science and Technology of China, China; Xin Su, Jie Zeng, Tsinghua University, China; Huanxi Cui, Chongqing University of Posts and Telecommunications, China

2. A Lightweight Filter-based Target Tracking Model in Wireless Sensor Networks

Chao Li, Zhenjiang Zhang, Yun Liu, Fei Xiong, Jian Li, Bo Shen, Beijing JiaoTong University, China

3. Radio-Map Search Algorithm based on Steepest Descent Principle

Deyue Zou, Dalian University of Technology, China; Yuwei Shi, Academy of Opto-Electronics, Chinese Academy of Sciences, China; Shuai Han, Harbin Institute of Technology, China

4. Node Scheduling for Localization in Heterogeneous Software-Defined Wireless Sensor Networks

Yaping Zhu, Feng Yan, Weiwei Xia, Southeast University, China; Fei Shen, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China; Song Xing, California State University, USA; Yi Wu, Fujian Normal University, China; Lianfeng Shen, Southeast University, China

10:30am - 11:00am

Coffee Break

Saturday, September 22 2018 11:00am - 12:30pm

Room: Terrace

Session 5: Handover, Scheduling, and Action Recognition

Chair: Changle Li, Xidian University, China

1. A Speed-adjusted Vertical Handover Algorithm based on Fuzzy Logic

Dongdong Yao, Xin Su, Bei Liu, Jie Zeng, Tsinghua University, China

2. A Self-Adaptive Feedback Handoff Algorithm based Decision Tree for Internet of Vehicles

Wenqing Cui, Weiwei Xia, Zhuorui Lan, Chao Qian, Feng Yan, Lianfeng Shen, Southeast University, China

3. Segment-based Scheduling Algorithm in Cache-Enabled Device-to-Device Wireless Networks

Shaoqin Peng, Bo Chang, Liying Li, Guodong Zhao, Zhi Chen, Qi Wang, University of Electronic Science and Technology of China, China

4. An Action Recognition Method based on Wearable Sensors

Fuliang Ma, Jing Tan, Xiubing Liu, Huiqiang Wang, Guangsheng Feng, Bingyang Li, Hongwu Lv, Junyu Lin, Mao Tang, Harbin Engineering University, China

12:30pm - 14:00pm

Lunch: Atrium Restaurant

Saturday, September 22 2018 14:00pm - 15:30pm

Room: Terrace

Session 6: Security

Chair: Arunita Jaekel, University of Winsor, Canada

1. Speed based Attacker Placement for Evaluating Location Privacy in VANET

Ikjot Saini, Sherif Ahmed, Arunita Jaekel, University of Windsor, Canada

2. HACIT2: a Privacy Preserving, Region based and Low Cost Solution for Dynamic Navigation and Forensics in VANET

Decoster Kevin, Billard David, University of Applied Sciences Western Switzerland in Geneva, Switzerland

3. A Lightweight Security and Energy-Efficient Clustering Protocol in Wireless Sensor Networks

Guangsong Yang, Xin-Wen Wu, Griffith University, Australia

4. Power Allocation for Physical Layer Security among Similar Channels

Xiangxue Tai, Shuai Han, Xi Chen, Qingli Zhang, Harbin Institute of Technology, China

15:30pm - 16:00pm

Coffee Break

Saturday, September 22 2018 16:00pm - 17:30pm

Room: Terrace

Session 7: Miscellaneous Topics in Wireless Networks

Chair: Feng Yan, Southeast University, China

1. A Decision Tree Candidate Property Selection Method based on Improved Manifold Learning Algorithm

Fangfang Guo, Luomeng Chao, Huiqiang Wang, Harbin Engineering University, China

2. Repairable Fountain Codes with Unequal Repairing Locality in D2D Storage Systems

Yue Li, Shushi Gu, Ye Wang, Juan Li, Qinyu Zhang, Harbin Institute of Technology in Shenzhen, China

3. Channel Impulse Response Analysis of the Indoor Propagation based on Auto-regressive Modeling

Jinpeng Liang, Jiangnan University, China; Wenjun Lu, Nanjing University of Posts and Telecommunications, China; Yang Liu, Qiong Wu, Baolong Li, Zhengquan Li, Jiangnan University, China

4. Predicting Freezing of WebRTC Videos in WiFi Networks

Suying Yan, Yuchun Guo, Yishuai Chen, Beijing JiaoTong University, China; Feng Xie, ZTE, China

18:00pm - 19:00pm

Dinner: Atrium Restaurant

ORGANIZING COMMITTEE

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