

# Juan Zhang

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RESEARCH INTERESTS      Wireless Networks, Mobile Edge Computing, Game Theory, Decision Making Strategies

EDUCATION      **University of Exeter**, Exeter, UK

**PhD Candidate**, Department of Computer Science      Sep. 2017 – Present

- *Topic*: Offloading decision making strategies in Mobile Edge Computing
- Supervisors: Dr. Yulei Wu and Prof. Geyong Min

**Beihang University(BUAA)**, (*Chinese Version*), Beijing, China

**M.Sc.**, School of Reliability and Systems Engineering, (*Chinese Version*)

Major in: Control Science and Engineering      Sep. 2011 – Mar. 2014

- *Topic*: Software Dependability, Reliability and Safety in Aircraft Control Systems
- Supervisor: Dr. Guoqi Li

**Beihang University(BUAA)**, Beijing, China      Sep. 2006 – Jul. 2010

**B.Eng.**, Mechanical Design, Manufacturing & Its Automation

WORK& RESEARCH EXPERIENCE      **Research Assistant**      Sep. 2015 – Mar. 2017  
Department of Computer Science | University of Otago, New Zealand  
Worked on the project “QoE and Energy Efficient-aware on Mobile Multimedia Transmission”.

**PhD Student | Research Assistant**      Sep. 2014 – Sep. 2015  
School of Transportation Science and Engineering | Beihang University, China  
Research on the topic of work “Big data and Reliability in Traffic Networks”.

**Network Architecture Engineer** | SINA Company      Mar. 2014 – Jul. 2015  
Designed an ontology-based intelligent system which is able to warn the server's faults automatically

In this project, I was in charge of building intelligent model and system to realize auto-warning when it comes to abnormal situation. In the model of monitoring, RULE-SERVER module can generate ITEM and ITEM\_ID according to rules and data from the front end and DC module respectively. After that, STORM-SERVER module can accept these rules and produce new rules in STROM module. Then Kafka module would send time series stream to STROM and receive these alarm rules from STROM. Similarly,

ALARM-GEN module will require data from DB module for warning messages generation, meanwhile, DB sends data to RELE-SERVER. As the result, ALARM module will send a warning when it sees these warning messages.

#### Master thesis project

Nov. 2012 – Jan. 2014

“Knowledge based Software Verification of Embedded Control Systems aided by Knowledge Database”

Theories and methods of knowledge engineering in embedded control software verification were studied in the project. Prolog- and Ontology-based knowledge database system used in FMEA analysis were built, and a relevant software prototype was verified. An expert system was finally been developed to identify and reuse the failure modes.

#### Participated projects as a key member | Beihang University(BUAA)

- **Project:** Development of ontology knowledge platform for failure modes identification and verification 2012 – 2013
- **Project:** Safety Analysis of Aircraft Embedded Software Systems based on Multiple Synergetic Models Jan. 2012 – Dec. 2013  
*Responsibility:* Built traceable meta-model and analysis its safety
- **Project:** Software Failure Modes and Effects Analysis tool development 2011 – 2012  
*Responsibility:* Participated the development of the tool, finished the test and tool guide.

#### AVIC Aerospace Power Control System Research Institute | (Wuxi 614)

Jul. 2011-Jan. 2013

**Project:** Software FMEA for Engine Control System of a Specific Aircraft  
*Responsibility:* Performed requirement analysis and failure modes analysis.

#### TEACHING EXPERIENCE

University of Exeter-Department of Computer Science

- **Learning from Data**(ECMM445) 60hrs  
Instructor: Bader-EI-Den, Mohamed Ph.D Summer 2021
- **Literature Review and Project Specification**(ECM3401) 60hrs  
Instructor: Yulei Wu, Ph.D Spring 2021
- **Enterprise Computing** (ECM3408) 60hrs  
Instructor: Zeliang Wang, Ph.D Spring 2021
- **Learning from Data** (ECM3420 & ECMM457, ECMM445) 60hrs  
Instructor: Bader-EI-Den, Mohamed Ph.D Autumn 2020
- **Software Development** (ECM2414) 140hrs  
Instructor:Yulei Wu, Ph.D Autumn 2020
- **Learning from Data** (ECM3420 and ECMM445) 60hrs  
Instructor: Hugo Barbosa Ph.D Autumn 2019
- **Software Development** (ECM2414) 140hrs  
Instructor:Yulei Wu, Ph.D Autumn 2019
- **Artificial Intelligence and Applications** (ECM2423) 60hrs  
Instructor:Alberto Moraglio, Ph.D Spring 2019
- **Algorithms that Changed the World** (ECM3428) 60hrs  
Instructor: Chunbo Luo, Ph.D Autumn 2018

- **Outside The Box: Computer Science Research and Applications**  
(ECM2427) 90hrs  
Instructor: Chunbo Luo, Ph.D Spring 2018

Beihang University - School of Reliability and Systems Engineering

- **Formal Methods** Sep. 2011 – Jun. 2012  
Instructor: Guoqi Li, Ph.D

COURSES	Reinforcement Learning - By David Silver DeepMind Stanford CS234: Reinforcement Learning
TEACHING TRAINING	Learning and Teaching in High Education Programme (Satge1 & 2) University of Exeter <span style="float: right;">Autumn 2018</span>

PUBLICATIONS **JOURNAL PAPERS**

- [J1] Pangwei Wang, Yunfeng Wang, Xu Wang, Ying Liu and **Juan Zhang\***,  
An intelligent actuator of an indoor logistics system based on multi-sensor  
fusion. *Actuators for Land Transport*.
- [J2] Pangwei Wang, Hui Deng, **Juan Zhang\***, Li Wang, Mingfang Zhang,  
and Yongfu Li, Model Predictive Control for Connected Vehicle Platoon  
under Switching Communication Topology. *IEEE Transactions on  
Intelligent Transportation Systems*. DOI: 10.1109/TITS.2021.3073012.
- [J3] Pangwei Wang, Yunfeng Wang, Hui Deng, Mingfang Zhang, **Juan Zhang\***,  
Multilane Spatiotemporal Trajectory Optimization Method (MSTTOM)  
for Connected Vehicles. *Journal of advanced transportation*. DOI:  
10.1155/2020/8819911.
- [J4] **Juan Zhang**, Yulei Wu, Geyong Min, Fei Hao, Laizhong Cui. Balancing  
Energy Consumption and Reputation Gain of UAV Scheduling in Edge  
Computing. *IEEE Transactions on Cognitive Communications  
and Networking*. DOI:10.1109/tccn.2020.3004592.
- [J5] Pangwei Wang, Hui Deng, **Juan Zhang\***, Mingfang Zhang. Real-time  
Urban Regional Route Planning Model for Connected Vehicles based on  
V2X Communication. *Journal of Transport and Land Use*. DOI:  
10.5198/jtlu.2020.1598.
- [J6] Guoqi Li, **Juan Zhang**. A Novel Ontology-Based Method to Represent  
and Classify Failure Modes of Sensors. *Sensors & Transducers Journal*:  
(ISSN: 2306-8515, e-ISSN 1726-5479). Nanjing. Aug. 2013.

**CONFERENCE PAPERS**

- [C1] **Juan Zhang**, Yulei Wu, Geyong Min. System Revenue Maximization for  
Offloading Decisions in Mobile Edge Computing. *IEEE International  
Conference on Communications*. IEEE ICC 2021.

- [C2] **Juan Zhang**, Yawen Chen, Haibo Zhang, Fangfang Zhang. QoE-aware and Energy-efficient Transmission of Multimedia Traffic in Wireless Networks. *2018 International Conference on Sensor Networks and Signal Processing (SNSP), IEEE*.
- [C3] **Juan Zhang**, Guoqi Li. A Novel Model-Based Method for Automatic Generation of FMEA. *The 2nd International Symposium on Computer, Communication, Control and Automation*. Shenyang. May. 2013.
- [C4] **Juan Zhang**, Guoqi Li and Xiao Liu. Compare of Formal Analysis and Testing for Verification of Safety-critical Systems: A Case Study. *International Conference on Software Engineering and Information System*. Xiamen. May. 2013.
- [C5] Xiao Yang, Li Guoqi and **Zhang Juan**. Passive Data Storage Based Housewares Store Management System. *2011 International Conference on Web Information Systems and Mining (WISM)*. Taiyuan. 2011.
- [C6] Yuchao Zhang, Guoqi Li, **Juan Zhang**. QP Based Framework for Development and Formal Verification of Flight Control Software of UAV. *AICT'11 Proceedings of the Third international conference on Artificial intelligence and computational intelligence*. Taiyuan. 2011.

CHINESE PATENT      **Juan Zhang** and Guoqi Li. FMEA-aided Process and information management based on model and text matching. 2012.06.28 / 201210218687.7

AWARDS

University of Exeter

- International Excellence Scholarship      Sep. 2017 – 2021

Student Awards —Graduate School of Beihang University

- Distinction Award (2/150)      Oct. 2012
- Excellent Graduate Award (5/150)      Sep. 2012
- Outstanding Session Chair Award      Oct. 2012
- First Class Scholarship      2014 – 2015
- Second Class Scholarship      2012 – 2014
- Second Class Scholarship      2011 – 2012

Student Awards —Beihang University

- Second Class Scholarship      2009-2010
- Second Class Scholarship      2008-2009
- Second Class Scholarship      2007-2008

SERVICES

**Reviewers**

- Journal of Parallel and Distributed Computing      2021
- IEEE Transactions on Network and Service Management      2021
- Sustainable Cities and Society      2021
- IEEE ISPA/BDCLOUD/SocialCom/SustainCom and IUCC      2019 & 2020
- Blockchain'20      2020

- IEEE Industrial Electronics Society, INDIN19, Multimedia Tools and Applications, Journal. 2019
- Dependability in Sensor, Cloud, and Big Data Systems and Applications (DependSys) 2019
- Journal of Risk and Reliability 2018
- Mobile and Wireless Networking, IEEE ICC 2017

#### **Local Arrangement Chair**

17 – 19 Dec. 2020

- The 13th IEEE International symposium on Social Computing and Networking (SocialCom-2020), Exeter, U.K.
- The 18th IEEE International symposium on Parallel and Distributed Processing with Applications (ISPA-2020)
- The 10th IEEE International Conference on Big Data and Cloud Computing (BDCloud-2020)
- The 10th IEEE International Conference on Sustainable Computing and Communications(SustainCom-2020)
- The 19th International conference on Ubiquitous Computing and Communications

#### **Session Chairs**

- The 20th IEEE International Conference on High Performance Computing and Communications (HPSS-2018), Exeter, UK Jun. 2018
- The 9th EAI International Conference on Big Data Technologies and Applications (BDTA), Exeter, U.K. 4 – 5 Sep. 2018
- International Telecommunication Networks and Applications Conference, (ITNAC), University of Otago, Dunedin, New Zealand Dec. 2016