

**Dr. Xu (Judy) Zhu**  
**CURRICULUM VITAE**

**Section 1 - Personal Details, Qualifications and Experience**

1.1 Personal Details

*Position*            Reader  
*Address*            Department of Electrical Engineering & Electronics  
                         The University of Liverpool  
                         Liverpool, L69 3GJ  
                         UK  
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1.2 Higher Education

**Education**

Aug.1999-May 2003            The Hong Kong University of Science and Technology, Hong Kong  
   Doctor of Philosophy (**PhD**) in Electrical and Electronic Engineering, awarded in Nov. 2003  
   Dissertation: Wireless MIMO Antenna Systems for Frequency Selective Fading Channels; Supervisor: **Prof. Ross D. Murch**, IEEE Fellow

Sep. 1995-Jul. 1999            Huazhong University of Science and Technology, Wuhan, Hubei, China  
   Bachelor of Engineering (**BEng**) in Electronics and Information Engineering (with **first class honours**), awarded in Jul. 1999  
   Thesis: CDMA for Broadband Wireless Communications (Grade: A+)

**Awards and Honours**

1999-2003            Full PhD Studentship, awarded by the Hong Kong University of Science and Technology.

1995-1999            4-time winner of the First-Class Studentship and Outstanding Student Prize, awarded by Huazhong University of Science and Technology.

1.3 Other Relevant Training and Qualifications

- Faculty Academic Leadership Training Programme, the University of Liverpool (Sep.—Dec. 2014)
- Leadership Lab Programme, the University of Liverpool and Imperial College Business School (25-27 Jun. 2012)
- Training Workshops of the Certificate in Professional Studies (CPS) in Learning and Teaching in Higher Education training, the University of Liverpool (2003-2006)
- Training Programme for Teaching Assistants, Hong Kong University of Science and Technology (1999)

1.4 Employment Record

May 2003–Present            Department of Electrical Engineering and Electronics  
   The University of Liverpool

### 1.5 Teaching Experience

**Year 0/1/2 Tutorials (Semesters 1&2, 2003-present)**

24 contact hours; ~10 students per annum

Learning outcomes: To provide students with assistance in study and personal issues.

**ELEC133: Applications of Computers and Professional Skills (7.5 credits, 2003-2005)**

6 contact hours (3 lectures & 3 experiments); 30 students; 1 assignment

Learning outcomes: Students are expected to use the MATHCAD software to solve engineering problems including system design and analysis

**ELEC171/172/173: Experimental, Computer Skills and Sustainability (As deputy lab-coordinator, 15 credits, 2003-2007)**

120 contact hours (14 all-day experiments); 80 students; 14 assessments

Learning outcomes: Students are expected to develop their experimental and computer skills as the basis of their study in Electrical Engineering and Electronics

**ELEC171/172/173: Experimental, Computer Skills and Sustainability--MATLAB (2007-2008)**

14 contact hours (7 lectures & 7 experiments); 80 students; 5 lab reports & 1 assignment.

Learning outcomes: Students are expected to use the MATLAB software to solve engineering problems including system design and analysis

**ELEC235: Engineering Applications of Computers (7.5 credits, 2003-2006)**

24 contact hours (12 lectures & 12 experiments); 50 students; 3 assignments (33.3% each)

Learning outcomes: Students are expected to use the MATLAB software to solve engineering problems including system design and analysis.

**ELEC273--Year 2 Project (Semesters 2, 2006-present)**

4 contact hours per group (weekly project meetings); 8-12 students per annum.

**ELEC315: Analogue and Digital Communications (7.5 credits, 2003-2012)**

26 contact hours (18 lectures, 6 problem classes & 2-hour exam); 35-60 students; 2-hour exam (100%)

Learning outcomes: Students are expected to understand the essential concepts of a communication system, and to be able to design an optimum receiver and analyse its performance for a communication system.

**ELEC316/416: Data Communications (7.5 credits, 2010-2012)**

26 contact hours (18 lectures, 6 problem classes & 2-hour exam); 115 students; 2-hour exam (100%)

Learning outcomes: Students are expected to understand the essential concepts of a data communication system, and to understand the design issues of a communication system.

**ELEC340: Final Year Project (Semesters 1 and 2, 2003-present)**

20 contact hours per student (weekly project meetings); ~10 students per annum

**ELEC377: Digital and Wireless Communications (15 credits, 2012-present)**

50 contact hours (36 lectures, 12 problem classes & 2-hour exam); 100 students; 3-hour exam (100%)

Learning outcomes: Students are expected to understand the essential concepts of advanced digital and wireless communication systems, and to be able to analyse the performance of a communication system.

**ELEC415: Information Theory and Coding (7.5 credits, 2011-2015)**

26 contact hours (18 lectures, 6 problem classes & 2-hour exam); ~25 students; 2-hour exam (100%)

Learning outcomes: Students are expected to understand the essential information theory and coding theory for design and analysis of a communications system.

**ELEC461/661: Communication Networks (7.5 credits, 2007--2012)**

26 contact hours (18 lectures, 6 problem classes & 2-hour exam); 35 students; 2-hour exam (100%)

Learning outcomes: Students are expected to understand the architecture of a computer network and protocols of different layers of the network, and to be able to evaluate performance of a computer network.

**ELEC477/677: Telecommunications/ Digital and Wireless Communications (15 credits, 2006-Present)**

50 contact hours (36 lectures, 12 problem classes & 2-hour exam); 25 students; 3-hour exam (100%)

Learning outcomes: Students are expected to understand the essential concepts of advanced digital and wireless communication systems, and to be able to analyse the performance of a communication system.

**ELEC640/460: MSc Project (2003-present)**

20 contact hours per student (weekly project meetings); 3~5 students per annum (8 students maximum)

1.6 Leadership, Professional and Collegial Experience

1.6.1 Leadership Experience

**University Duties**

- Member, Board of Discipline, the University of Liverpool (Sep. 2017—Present)
- Director, “EPSRC Impact Acceleration Account Scheme”, £1M, the University of Liverpool, UK, 2013-2016.
- Member, Collaborative Provision Sub-Committee, the University of Liverpool (Sep. 2012—Present)

**Faculty Duties**

- Member, Academic Quality and Standards Sub-Committee, Faculty of Science and Engineering (2011—2014)

**School Duties**

- Member, School Student Experience Committee, School of Electrical Engineering, Electronics and Computer Science (2013—Present). Will chair it from 2016.

**Departmental Duties**

- Mitigating Circumstances Committee (Sep. 2017—Present)
- **Director of Learning and Teaching** (Nov. 2011—Jan. 2016). Responsible for:
  - Chairing the Board of Studies
  - All programme structures in the Department
  - Approval and changes of module specifications
  - Interface with Faculty and University ASQC and TQSD; Standing on the Faculty Academic Quality and Standards Sub Committee
  - Interface with the students with poor attendance/ performance
  - Liaising with the academic administrative roles under the director of learning and teaching: Programme Directors for the individual UG and PGT programmes, Internationalisation Director, Examinations Officer (and Deputy), Timetabling Officer (and Deputy), Quality Assurance Officer, Year in Industry Co-ordinator, Accreditation Officer and Intra-Faculty L&T Liaison Officer
  - Other L&T related issues
- **Examinations Officer** (Sep. 2007-Sep. 2011). Main duties:
  - Examination timetabling: to liaise with Student Admission and Support (SAS) of the University on timetabling.

- Coordinating papers: to collect exam papers from staff, get feedback from internal and external examiners, and liaise with SAS.
- Processing marks: to collect marks from staff and coordinate marks input into the SPIDER system.
- Reporting to the departmental mitigating circumstances committee (MCC) on students whose performances are affected by mitigating circumstances.
- Preparing for Board of Examiners (BoE) meetings: to prepare mark lists of different levels for 9 BoE meetings throughout every year.
- Mark changes following BoE meetings: to coordinate mark changes following BoE meetings.
- Degree classifications: to produce degree classifications lists and liaise with SAS on them.
- External feedback: to liaise with external examiners on examination related issues.
- Member, Departmental Management Board, Department of Electrical Engineering and Electronics (2011—Present)
- Member, Board of Studies, Department of Electrical Engineering and Electronics (Jul. 2007—Present)
- Member, Information Communications Technology Committee, Department of Electrical Engineering and Electronics (Jul. 2005—Present)
- Member, Research Committee, Department of Electrical Engineering and Electronics (Jun. 2009—Dec. 2012)
- Deputy Examination Officer (Sep. 2004—Sep. 2007): Taking minutes of the examination board meetings, FTE check, and mark scaling, etc.
- Deputy Year 1 Master (Sep. 2003—Sep. 2007): Co-ordinating year 1 labs etc.

### **Others**

Lectureship interview panel member, Department of Electrical Engineering and Electronics, The University of Liverpool, 2014 and 2015

Lectureship interview panel member, School of Engineering, The University of Liverpool, 2013

### 1.6.2 Professional and Collegial Experience

- **Memberships of Professional Bodies**
  - Senior Member, Institute of Electrical and Electronics Engineers (IEEE)
  - Member, IEEE Communications Society
  - Member, IEEE Wireless Communications Technical Committee (WTC)
  - Member, IEEE Signal Processing and Communications Electronics Technical Committee (SPCE-TC)
  - Member, IEEE Signal Processing for Communications and Networking Technical Committee (SPCTOM-TC)
  - Member, Institution of Engineering and Technology (IET)
  - Member, Rail Research UK Association
  - Member, IET Women’s Network
  - Member, LivWise Network
- **Editorial Roles**
  - Editor, IEEE Transactions on Wireless Communications, 2012—2017.
  - Guest Editor, Special Issue of “Smart Antennas and MIMO Communications”, Electronics, Feb. 2017.
  - Guest Editor, Special Issue on Intelligent Radio Technology, Wireless Engineering and Technology, Nov. 2013.

- Guest Editor, Special Issue on Recent Advances in Systems and Informatics, Computer Science and Information Systems, vol. 9, no. 4, Dec. 2012.
- **Conference Chair**
  - Publicity Chair, IEEE iThings 2017, Exeter, UK, Jun. 2017.
  - Publicity Chair, the 15<sup>th</sup> IEEE International Conference on Ubiquitous Computing and Communications (IUCC-2016), Granada, Spain, Oct. 2016.
  - Symposium Chair, Communication Theory Symposium, IEEE International Conference on Communications (ICC 2016), Kuala Lumpur, Malaysia, Jun. 2016.
  - Publicity Chair, the 14<sup>th</sup> IEEE International Conference on Ubiquitous Computing and Communications (IUCC-2015), Liverpool, Oct. 2015.
  - Special Session Chair, IEEE ICCE-TW 2015, Taipei, Taiwan, Jun. 2015.
  - Symposium Chair, Signal Processing for Communications Symposium, the International Conference on Computing, Networking and Communications (ICCN 2014), Honolulu, USA, Feb. 2014.
  - Symposium Chair, Wireless Networking Symposium, IEEE International Conference on Wireless Communications and Signal Processing (WCSP 2014), Hefei, China, Oct. 2014.
  - Programme Chair, 2012 International Conference on Systems and Informatics (ICSAI 2012), Yantai, China, May 2012.
  - Publication Chair, the 11<sup>th</sup> IEEE International Conference on Ubiquitous Computing and Communications (IUCC-2012), Liverpool, Jun. 2012.
  - Vice Chair, 2008 ICA Research Network International Workshop, Liverpool, Sep. 2008.
  - Vice Chair, 2006 ICA Research Network International Workshop, Liverpool, Sep. 2006.
- **Event Host/Organiser**
  - Organiser, ICT for Manufacturing Workshop, the University of Liverpool, Mar. 2013.
  - Organiser, Distinguished Lecture in Manufacturing by Peter Marsh (Manufacturing Editor, Financial Times), the University of Liverpool, Feb. 2013.
- **Conference Session Chair**
  - IEEE International Conference on Communications (ICC 2013), Budapest, Hungary, Jun. 2013.
  - IEEE International Conference on Wireless Communications, Networking and Mobile Computing (WiCOM 2008), Dalian, China, Oct. 2008.
  - 2008 ICA Research Network International Workshop, Liverpool, Sep. 2008.
  - IEEE International Conference on Wireless Communications, Networking and Mobile Computing (WiCOM 2007), Shanghai, China, Sep. 2007.
  - 2006 ICA Research Network International Workshop, Liverpool, Sep. 2006.
  - 14<sup>th</sup> European Signal Processing Conference (EUSIPCO 2005), Antalya, Turkey, Sep. 2005.
- **Conference Technical Programme Committee (TPC) Member**
  - IEEE International Conference on Communications (annual flagship conference of the IEEE Communications Society), 2011--Present.
  - IEEE Global Telecommunications Conference (annual flagship conference of the IEEE Communications Society), 2009--Present.
  - IEEE WCNC, 2011—Present
  - IEEE PIMRC 2013
  - IEEE WCNIS2010-Wireless Communication Systems (WCNIS2010-WCS)
  - International Symposium on Wireless Communications Systems 2010 (ISWCS 2010)

- 15th Asia-Pacific Conference on Communications (APCC 2009), Shanghai, China, Oct. 2009.
  - IEEE Vehicular Technology Conference (VTC 2009-Spring), Barcelona, Spain, Apr. 2009.
  - 2008 ICA Research Network International Workshop, Liverpool, Sep. 2008.
  - IAENG (International Association of Engineers) World Congress on Engineering (WCE2008), London, Jul. 2008.
  - IEEE Vehicular Technology Conference (VTC 2008-Spring), Singapore, May 2008.
  - 3<sup>rd</sup> IEEE International Workshop on Performance Analysis and Enhancement of Wireless Networks (PAEWN'08), Japan, Mar. 2008.
  - International Conference on Independent Component Analysis (ICA 2007), London, Sep. 2007.
  - IAENG (International Association of Engineers) World Congress on Engineering (WCE2007), London, Jul. 2007.
  - 2006 ICA Research Network International Workshop, Liverpool, Sep. 2006.
- **Panel Member**
- EPSRC ICT panel member, Dec. 2016
- **Reviewer**
    - Active reviewer for: IEEE Transactions on Wireless Communications, IEEE Transactions on Communications, IEEE Transactions on Vehicular Technology, IEEE Communications Letters, IEEE Transactions on Signal Processing, IEEE Transactions on Systems, Man and Cybernetics, EURASIP Journal on Wireless Communications and Networking, IET Communications, IET Electronics Letters, IEEE Global Telecommunications Conference (GLOBECOM), IEEE International Conference on Communications (ICC), IEEE International Symposium on Personal, Indoor and Mobile Communications (PIMRC), IEEE Vehicular Technology Conference (VTC), and IEEE Wireless Communications and Networking Conference (WCNC), etc.
    - Reviewer for EPSRC grant proposals.

## 1.7 Research Experience and Knowledge Exchange Activity

### 1.7.1 Research Interests

#### Wireless Communications and Signal Processing

- Smart/MIMO Antenna Systems
- Equalization
- Cooperative Communications
- Cognitive Radio Networks
- Broadband OFDM Techniques
- Cross-Layer Optimization
- Ultra-Wideband Radio Technology
- Space-Time Processing
- Multi-User Communications
- Smart Grid Communications
- Green Communications

### 1.7.2 Research Grants

#### **Research Grants Awarded**

1. “Improving mobile positioning and network performance estimation”, £180,186, **Principal Investigator**, Knowledge Transfer Partnership (KTP) grant, Technology

- Strategy Board (TSB), UK, Jun. 2016—Dec. 2018 (Industrial partner: Wadaro Ltd.)
2. “Cross-Layer Resource Allocation for Heterogeneous Green Wireless Sensor Networks”, £12,000, **Principal Investigator**, Royal Society-Newton Mobility Grant, UK, Apr. 2016—Mar. 2018.
  3. “Demonstration of a Machine Learning enabled IT Solution for Building Energy Management”, £10,000, **Principal Investigator**, Knowledge Exchange & Impact Voucher Scheme, the University of Liverpool, Oct. 2015—Jun. 2016.
  4. “Technology Acceleration of an Innovative Broadband Rectenna for Wireless Energy Harvesting”, £100,000, **Co-Investigator**, AETERNUM (USA), Sep. 2013—Feb. 2017.
  5. “Accurate Geo-Location of Mobile Users for Future Wireless Networks”, £57,000, **Principal Investigator**, Impact Acceleration Account, Engineering and Physical Science Research Council (EPSRC), UK, Mar. 2014—Jun. 2015.
  6. “An Intelligent Web/App-based IT Solution for Monitoring and Controlling Energy, Water and Waste Usage in Buildings”, £66,000, **Principal Investigator**, Centre for Global Eco-Innovation (CGE), Northwest England, Oct. 2012—Oct. 2015. (Industrial partner: Inteb Sustainability Ltd.)
  7. “Development of an Indoor Way Finding System for the Visually Impaired”, £100,000, **Co-Investigator**, Knowledge Transfer Partnership (KTP) grant, Technology Strategy Board (TSB), UK, Oct. 2012—Apr. 2014 (Industrial partner: VST Ltd.)
  8. “Feasibility Study into the Use of SIM Cards to Geo-locate Terminal”, **Co-Investigator**, £5,000, Innovation Voucher Scheme, the University of Liverpool, Feb.-Jul. 2013. (Industrial partner: Wadaro Ltd.)
  9. “Green Wireless Communications for Energy Consumption Reduction”, **Principal Investigator**, £20,000, Pathways to Impact Award, Engineering and Physical Science Research Council (EPSRC), UK, Mar. 2012—Mar. 2013.
  10. “Bridging the Gap between ICT and Manufacturing”, **Principal Investigator**, £12,500, Shaping Capability Funds, Engineering and Physical Science Research Council (EPSRC), UK, Mar. 2012—Mar. 2013.
  11. “Small Items of Research Equipment at the University of Liverpool”, £19,050, Engineering and Physical Science Research Council (EPSRC), UK, Nov. 2012.
  12. “Sustainable ICT technology - Development of Green Wireless Receiver with Low Complexity & High Performance Equalization Techniques”, **Principal Investigator**, £148,293, Knowledge Exploitation Laboratory (KEL) Project, Engineering and Physical Science Research Council (EPSRC), UK, Feb. 2011—Feb. 2012. (Industrial partner: Ranplan Ltd.)
  13. “Development of an Energy-Efficient 4G Wireless Communication System”, **Principal Investigator**, £10,000, Knowledge Exchange Voucher Scheme, the University of Liverpool, May-Aug. 2011. (Industrial partner: ZET Ltd.)
  14. “Green MIMO Systems for Next Generation Wireless Communications”, **Principal Investigator**, £21,651, Pathways to Impact Award, Engineering and Physical Science Research Council (EPSRC), UK, Aug. 2010—Mar. 2011.
  15. “Cooperative Spectrum Sensing and Allocation for Cognitive Radio Networks”, **Co-Investigator**, £20,000, National Natural Science Foundation of China (NSFC), Oct. 2010—Sep. 2013. (Academic partner: HUST, China)
  16. “Low-Complexity and High-Performance Equalization for Wireless MIMO Communication Systems in Frequency Selective Fading Channels”, **Principal Investigator**, £339,828, Standard research grant, Engineering and Physical Science Research Council (EPSRC), UK, Jun. 2007—May 2010. (Industrial partner: Toshiba Research Europe Ltd.)
  17. “A Novel RF Positioning System for Multipath Environments”, **Co-Investigator**, £158,208, Knowledge Transfer Partnership (KTP) grant, Technology Strategy Board (TSB), UK, Oct. 2007-Oct. 2009. (Industrial partner: Guidance Monitoring Ltd.)
  18. “Antenna Centre of Excellence Stage 2 (ACE2)”, **Co-Investigator**, £60,000 (Total

- grant: €5M), Network grant, European Commission (EC) Framework programme 6 (FP6), Jan. 2006—Dec. 2007.
19. “Antenna Centre of Excellence”, **Co-Investigator**, £70,000 (Total grant: €5M), Network Grant, European Commission (EC) Framework Programme 6 (FP6) IST, Jan. 2004—Dec. 2005.
  20. “Cross-Layer Optimization of Heterogeneous Wireless Networks with Ad-Hoc”, **Co-Investigator**, £20,000, National Natural Science Foundation of China (NSFC), Oct. 2006—Sep. 2009.
  21. “Cross Layer Optimization for Wireless MIMO OFDM Systems”, **Principal Investigator**, £5,000, Research Development Fund (RDF), University of Liverpool, Jun. 2006—Jun. 2007.
  22. “MIMO Systems for Ultra Wideband Wireless Communications”, **Principal Investigator**, £3,250, Research Development Fund (RDF), University of Liverpool, Dec. 2003—Dec. 2004.

### **Research Scholarships**

1. Jointly funded international PhD studentships for 2013/14, the University of Liverpool and A\*STAR Singapore (Home/international fee + £15k stipend per annum for 2 years in Liverpool, and monthly stipend of S\$2,500 for 1-2 years in Singapore).
2. Jointly funded international PhD studentships for 2012/13, the University of Liverpool and A\*STAR Singapore (Home fee + £13,590 stipend per annum for 2 years in Liverpool, and monthly stipend of S\$2,500 for 1-2 years in Singapore).
3. Postgraduate attachment scheme, S\$6,000, A\*STAR, Singapore, Jun.—Dec. 2012 (to support PhD student Mr. Linhao Dong’s visit at A\*STAR).
4. Post-doc research scholarship, £16k, PhD Plus Scheme, Engineering and Physical Science Research Council (EPSRC), 1 Mar.—31 Aug. 2011.

### 1.7.3 Research Students and PDRAs Supervised

#### **Graduated Research Students under my Supervision (as Primary Supervisor)**

1. Punnoose, Sonu (PhD awarded in December 2006; funded by ORSAS)
2. Sarperi, Luciano (PhD awarded in July 2007; funded by ORSAS)
3. Wu, Ye (PhD awarded in December 2008; funded by ORSAS; recipient of the **2008 Chinese Governmental Award for Excellent Students Studying Abroad**)
4. Musbah, Mohamed (PhD awarded in July 2010; funded by Libyan government)
5. Surajudeen-Bakinde, Nazmat T (PhD awarded in December 2010; funded by Commonwealth Scholarships)
6. Zhou, Nan (PhD awarded in December 2010; funded by ORSAS; recipient of the **2010 Chinese Governmental Award for Excellent Students Studying Abroad**)
7. Nwamadi, Obilor (PhD awarded in July 2011; funded by EPSRC)
8. Dong, Linhao (PhD awarded in July 2014)
9. Jiang, Yufei (PhD awarded in December 2014)
10. Zhu, Wenfei (MPhil awarded in December 2014)
11. Ma, Teng (MPhil awarded in July 2015)
12. Zhang, Chao (PhD awarded in July 2016)
13. Yin, Jun (PhD awarded in July 2017; funded by the School Studentship)
14. Heggo, Mohammad (PhD awarded in July 2017; funded by the University of Liverpool and A\*STAR Singapore)
15. Li, Yang (PhD to be awarded in December 2017; partially funded by the EPSRC Innovation Voucher Award)
16. Wang, Yanghao (MPhil to be awarded in December 2017; funded by Centre for Global Eco-Innovation (CGE))



### **Ongoing Research Students under My Supervision (as Primary Supervisor)**

1. Wei, Zhongxiang (Year 4 PhD; funded by the University of Liverpool and A\*STAR Singapore)
2. Zhu, Kainan (Year 4 PhD; funded by the School of Electrical Engineering, Electronics and Computer Science)
3. Luo, Xing (Year 3 PhD)
4. Liu, Boda (Year 2 PhD; partially funded by Innovate UK)
5. Liu, Yujie (Year 2 PhD)

### **External Research Students**

Appointed in 2010 as the external supervisor of 6 research students in the Department of Electronics and Electrical Communications, Menoufia University, Menouf, Egypt

### **Ongoing/Past Post-doc Researchers under my Supervision**

1. Jiang, Yufei: EPSRC IAA post-doc research associate, Jul. 2014—Jun. 2015.
2. Yang, Chunhua: KTP associate, Oct. 2007-Oct. 2009.
3. Fu, Weiming: KTP associate, Oct. 2007-Oct. 2009.
4. Gao, Jingbo: EPSRC post-doc research associate, Jun. 2007—Sep. 2010.
5. Chattha, Hassan: EPSRC KEL project, Jan. 2011—Oct. 2011
6. Nwamadi, Obilor: EPSRC KEL project and PhD Plus, Mar. 2011—Feb. 2012
7. Jin, Lei: EPSRC KEL project, Nov. 2011—Feb. 2012
8. Zheng, Xin, KTP associate, Oct. 2012—Jul. 2013

### **Ongoing/Past Research Visitors under my Supervision**

1. Prof. W. Xu: Honorary visiting professor, Sponsored by NSFC, Apr. 2016—Mar. 2018
2. Dr. D. Gao: Honorary visiting research associate, sponsored by CSC, Dec. 2015—Dec. 2016
3. Mr. Emad S. Hassan: Honorary visiting research assistant, sponsored by the Egyptian government, Aug. 2008-Feb. 2009.
4. Mr. Obilor Nwamadi: Intern undergraduate student from Cyprus, Jun. 2006-Sep. 2006.
5. Mr. Ye Wu: honorary visiting research assistant, sponsored by RDF, the University of Liverpool, Sep. 2003-Sep. 2004.

### 1.8 Invited Speeches

- Forum for Outstanding Overseas Young Scholars, CESC, Nov. 2016, Chengdu, China.
- Symposium on Service-Oriented Next Generation Networks, Jul. 2014, Liverpool, UK.
- 2013 East Lake International Forum for Outstanding Overseas Young Scholars, Dec. 2013, Wuhan, China.
- International Workshop on Planning and Optimization of Wireless Networks (OPTNet 2012), Mar. 2012, Sheffield, UK.
- Three invited talks at the Next Generation Wireless Network (NGWNet) Workshop, 15-17 Jun. 2005, Edinburgh, UK: “Transmit Power Allocation for Wireless MIMO Systems with Layered Space-Time Equalization”, “Adaptive Iterative Layered Space-Frequency Equalization for Single-Carrier MIMO Systems”, and “Blind MIMO OFDM Receivers for Wireless Communications”.

### 1.9 Industrial Collaborations

- Wadaro Ltd., UK (in collaboration on a KE voucher and an IAA project to investigate SIM based accurate geo-location methods, Jan. 2014—Present; 2-year KTP in preparation, to be submitted Oct. 2015)
- Inteb Sustainability Ltd., UK (in collaboration on a Centre for Global Eco-innovation project, Apr. 2012--Present)
- VST Ltd. UK (in collaboration on a KTP project on indoor navigation system for visually impaired people; Oct. 2012—Present)
- Rainford EMC Systems, UK (in collaboration on a Centre for Global Eco-innovation project, Apr. 2012--Present)
- ZTE Ltd., Germany (in collaboration on development of an Energy Efficient Next Generation Wireless Communication System, 2010--2012)
- Ranplan Ltd., UK (in collaboration on an EPSRC KEL project to develop a green wireless communications receiver, 2010--2011)
- Toshiba Research Europe Ltd., UK (in collaboration on an EPSRC project to develop high performance and low complexity equalisers for wireless communication systems, 2006--2010)
- Guidance Monitoring Ltd., UK (in collaboration on a KTP project to develop an ultra wideband indoor positioning system which has a wide range of applications such as monitoring prisoners and tracking medical devices in hospital, 2007--2010)
- WiNetworks Ltd., Israel (in collaboration on developing cognition and cooperation enabled base stations for wireless networks, Jun.—Oct. 2009)
- Noniussoft S.A., Portugal (in collaboration on developing software prototypes for cooperative and cognitive wireless networks, Jun.—Oct. 2009)
- Keithley Instruments Inc., UK (in collaboration on establishing a teaching/research lab with Keithley signal generator and analyser, Dec. 2007)

#### 1.10 Collaborations with Research Institutions

- Osaka Prefecture University, Japan (over 15 joint publications, 2008—Present)
- Menoufia University, Egypt (visiting scholarship, 6 joint research students, joint publications, 2008—Present)
- A\*STAR, Singapore (3 joint PhD studentships, internship, and joint publications, 2011—Present)
- Huazhong University of Science and Technology, China (two joint NSFC grants, and joint publications, 2009—Present)
- Xi'an Jiaotong Liverpool University (XJTLU), China (two joint PhD students, and 8 joint publications, 2010—Present)

#### 1.11 Other Relevant Activities

##### **External Examinations**

1. PhD examination, University of York, Nov. 2017
2. PhD examination, University of Western Australia, Aug. 2016
3. MRes examination, University of Warwick, Nov. 2015
4. PhD examination, University of Kent, Jul. 2015
5. PhD examination, University of Southampton, Feb. 2015
6. PhD examination, University College Dublin, Dec. 2014
7. MPhil examination, University of Lancaster, Apr. 2014
8. PhD examination, University of Southampton, Jan. 2014
9. MPhil examination, University of Sheffield, Nov. 2013
10. MPhil examination, Multimedia University, Malaysia, Sep. 2013
11. PhD examination, University of York, 16 Jul. 2013
12. PhD examination, University of York, 7 Mar. 2007
13. MPhil examination, University of Manchester, 22 Nov. 2007 and 1 Nov. 2008

**Internal Examinations**

1. PhD examination, M. Khater, Mar. 2014
2. PhD examination, M.W. Aslam, 21 Jan. 2013
3. PhD examination, E. Rodriguez-Martinez, 30 Nov. 2011
4. PhD examination, S. Bravo-Solorio, 23 Nov. 2010
5. PhD examination, U. Khan, 10 Nov. 2010
6. PhD examination, L. Momani, 15 Feb. 2010
7. PhD examination, D. Li, 27 Nov. 2009
8. PhD examination, S.A. Salem, 30 Nov. 2007
9. PhD examination, L. Zhang, 26 Nov. 2006
10. PhD examination, Q. Zhang, 30 Jun. 2006

## Section 2--Publications and Submitted Papers

### 2.1 Book Contributions

1. Y. Jiang, **X. Zhu**, E. G. Lim, Y. Huang and H. Lin, "Semi-Blind Carrier Frequency Offset Estimation and Channel Equalization," Springer, 2015. ISBN 978-3-319-24984-1.
2. N. Surajudeen-Bakinde, **X. Zhu**, J. Gao, A. K. Nandi and H. Lin, "Genetic Algorithm based Equalizer for Ultra-Wideband Wireless Communication Systems", in *Ultra Wideband Communications: Novel Trends / Book 3*, edited by M. Matin, InTech Open Access Publisher, ISBN 978-953-307-461-0, 2011.
3. N. Zhou, **X. Zhu** and Y. Huang, "Cross-Layer Optimization with Guaranteed QoS for Wireless Multiuser OFDM Systems", in *4G Mobile and Wireless Communications Technologies*, edited by S. A. Kyriazakos etc., River Publishers, Aug. 2008.

### 2.2 Refereed Journal Papers

1. X. Luo, **X. Zhu**, E. G. Lim, and Y. Huang, "A semi-blind model with parameter identification for building temperature estimation," *Cognitive Computation*, 12 pages, Jun. 2017 (early access). DOI: 10.1007/s12559-017-9486-0.
2. M. Heggo, **X. Zhu**, S. Sun and Y. Huang, "White Broadband Power Line Communication: Exploiting the TVWS for Indoor Multimedia Smart Grid Applications," *International Journal of Communication Systems*, 9 pages, May 2017 (early access). DOI: 10.1002/dac.3330.
3. Z. Wei, **X. Zhu**, S. Sun, and Y. Huang, "Energy efficiency oriented cross-layer resource allocation for multiuser full-duplex decode-and-forward indoor relay systems at 60 GHz," *IEEE Journal on Selected Areas in Communications*, vol. 34, no. 12, pp. 3366-3379, Dec. 2016. DOI: 10.1109/JSAC.2016.2611982.
4. Z. Wei, **X. Zhu**, S. Sun, Y. Huang, A. Al-Tahmeesschi, and Y. Jiang, "Energy-efficiency of millimeter-wave full-duplex relaying systems: challenges and solutions," *IEEE Access*, vol. 4, pp. 4848 - 4860, Sep. 2016. DOI: 10.1109/ACCESS.2016.2591954.
5. A. O. Kotb, Y. Shen, **X. Zhu** and Y. Huang, "iParker - A New Smart Car Parking System Based on Dynamic Resource Allocation and Pricing," *IEEE Transactions on Intelligent Transportation Systems*, vol. 17, no. 9, pp. 2637-2647. Sep. 2016. DOI:10.1109/TITS.2016.2531636.
6. M. Heggo, **X. Zhu**, Y. Huang and S. Sun, "Modelling of the VHF Current Conversion from Excited Antenna Mode to Differential Mode at Transmission Line Terminals," *IEEE Transactions on Electromagnetics and Compatibility*, vol. 58, no. 4, pp. 1184—1193, Apr. 2016. DOI: 10.1109/TEMC.2016.2555334.
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#### 2.4 Books/Conference Proceedings Edited

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#### 2.5 Submitted Papers

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