


Curriculum Vitae – William Liu

PART 1

1a. Personal details				
Full name	<i>Title</i>	<i>First name</i>	<i>Second name(s)</i>	<i>Family name</i>
	Dr	William		Liu
Present position	Senior Lecturer			
Organisation/Employer	Unitec and Manukau Institute of Technology (MIT), Te Pūkenga New Zealand Institute of Skills and Technology since March 2023, while with Auckland University of Technology (AUT) for 12+ years since June 2010			
Contact Address	School of Computing, Electrical and Applied Technology			
	139 Carrington Road, Mt Albert, Building 183 (Te Puna)			
	Auckland		Post code	1025
Work telephone	+6421861282	Mobile	+6421861282	
Email	wliu@unitec.ac.nz			
Personal website (if applicable)	ORCID:  https://orcid.org/0000-0002-1852-7703 Scopus Author ID: 56962720400 ResearchGate: https://www.researchgate.net/profile/William_Liu4 LinkedIn: https://www.linkedin.com/in/william-liu-401a691a/			

1b. Academic qualifications

September 2005 - January 2010 PhD in Electrical and Computer Engineering, University of Canterbury, Christchurch, New Zealand. *Doctoral Thesis: "Ant Based Algorithm and Robustness Metric in Spare Capacity Allocation for Survivable Routing"*

February 2003 - February 2005 Masters with **Distinction** in Electrical and Computer Engineering, University of Canterbury, Christchurch, New Zealand. *Master Thesis: "Resource Allocation Schemes in Ultra Wide Band Networks"*

September 1993 - September 1997 Bachelor (with Honours) in Telecommunications Engineering, Beijing University of Post and Telecommunications, Beijing, China

1c. Professional positions held

March 2023 – present Senior Lecturer (contract), School of Computing, Electrical and Applied Technologies (SCEAT), Unitec Institute of Technology, Te Pūkenga – New Zealand Institute of Skills and Technology, Auckland, New Zealand

March 2023– present Senior Lecturer (contract), School of Business and Digital Technologies (SBDT), Manukau Institute of Technology, Te Pūkenga – New Zealand Institute of Skills and Technology, Auckland, New Zealand

January 2015 – March 2023 Senior Lecturer, Department of Computer Science and Software Engineering (CSSE), School of Engineering, Computer and Mathematical Sciences (SECMS), Auckland University of Technology (AUT), Auckland, New Zealand

July 2014 – April 2019 Programmes Leader of four Postgraduate Programmes in SECMS including Master of Computer and Information Sciences (**MCIS**); Postgraduate Diploma of Computer and Information Sciences (**PGDip CIS**); Postgraduate Certificate of Computer and Information Sciences (**PGCert CIS**); and Bachelor of Computer and Information Sciences Honours (**BCIS Hons**)

July 2010 – December 2014 Lecturer, School of Computer and Mathematical Sciences (SCMS), Auckland University of Technology (AUT), Auckland, New Zealand

May 1997 – June 2002 Telecommunication Network Architecture Designer, Beijing Telecom, China

1c.a Teaching Activities

AUT COMP607 Information Security Technologies (UG, 2nd year, 70+ students), also including offshore collaboration with Vietnam class (30+ students) and P.R. China class (50+ students), *since 2010*

AUT COMP609 Network and System Administration (UG, 2nd year, 100+ students), also including offshore collaboration with P.R. China class (60+ students), *since 2010*

AUT COMP711 Theory of Computation (UG, 2nd year, 30+ students), *since 2021*

AUT COMP812 Next Generation Network (PG, 30+ students), *since 2018*

IEEE SIGHT Initiative:

CCIS724 Advanced Data Communications&Networking (volunteering teaching), Christ University in Pacific, Nuku'alofa Tonga, 3rd year 7 students, *since 2021*

CCIS712 Network Design and Implementation (volunteering teaching), Christ University in Pacific, Nuku'alofa Tonga, 3rd year 9 students, *since 2023*

Unitec ISCG744 Cloud Application Design and Development (UG, 3rd year, 11 students), *since 2023*

MIT 563.684 Big Data Analysis (UG, 2nd year, 11 students) *since 2023*

MIT 563.685 Business Statistics for Decision Making (UG, 2nd year, 13 students) *since 2023*

MIT 502.524 Fundamentals of Business Intelligence (UG, 2nd year, 10 students) *since 2023*

MIT 565.693 Wireless Networks (UG, 2nd year, 15 students) *since 2023*

1d. Present research/professional speciality

Telecommunication & Internet protocol and architecture design and performance evaluation. Specialize on multi-objective optimization, graph theory and network science, and their applications on sustainable networking and computing, network survivability and service resilience, trustworthy networking and computing. Moreover, I have broad interest on ICT sustainability related learning and teaching, as well as curing Internet addiction with Internet intelligence.

1e. Total years research experience

18+ years (from PhD started)

1f. Professional distinctions and memberships (including honours, prizes, scholarships, boards or governance roles, etc)

May 2023 – May 2025 The Ministry of Business, Innovation and Employment (MBIE) of New Zealand, Catalyst Seeding New Zealand- Japan Joint Research Project, entitled “**Trustworthy and Privacy-preserving Collaborative Control Technologies for Vehicular IoT**” NZ\$60,000(GST excl.). I am the PI and the national collaborators are Professor Peter Chong (Auckland University of Technology), Professor Kevin Sowerby (University of Auckland), Associate Professor Ian Welch (Victoria University of Wellington) and the leading researcher in Japan is Professor Celimugu Wu (The University of Electro-Communications). More details can be found here: <https://www.royalsociety.org.nz/what-we-do/funds-and-opportunities/catalyst-fund/catalyst-seeding/recipients-2/recipients-july-2022/>

October 2022 – January 2023 Initiative to explore the efficacy of Acupuncture treatments on stress: A data-driven intelligent analysis approach using Heart Rate Variability (HRV) measurements, NZ\$5000 (GST excl.) funded by 2022 ECMS Women in Tech Research Grant , the PI is Shoba Tegginmath, and I am the leading AI.

July 2022 – Dec. 2022 AUT School of Engineering, Computer and Mathematical Sciences, School Contestable Fund on the project, entitled “**A 3-D acupuncture healthcare data management and treatment system for improving humans suffering from mental health (DADDY4ISA)**”, NZ\$20,000 (GST excl.). PI.

2018 - 2021 The Ministry of Business, Innovation and Employment (MBIE) of New Zealand, Catalyst Strategic Investment Grant on the project, entitled “**Advanced Security Technologies for the Internet of Things**”, NZ\$515,002.02 (GST incl.) and The National Research Foundation of Republic of Korea. Lead PIs: Huy Kang Kim (Korea University), Dong Seong Kim (University of Canterbury) and NZ Co-PIs: Associated Professor Julian Jang-Jaccard (Massey University), Dr Ian Welch (Victoria University of Wellington), Dr William Liu (Auckland University of Technology). http://iotresearch.org/?page_id=31

2018 - 2020 New Zealand Council for Educational Research Grant on the project, entitled “**Investigating the Impact of Non-routine Problem Solving on Creativity, Engagement and Intuition of STEM Tertiary Students**”, NZ\$198,205, Lead PI are Associate Professor Sergiy Klymchuk and Professor Emeritus Mike Thomas from the University of Auckland. Dr William Liu is one of Co-PIs.

2018-2019 Travel grant (2000\$) to attend the Chinese Scholar Forum in Beijing University of Posts and Telecommunications (BUPT), by BUPT.

2018-2019 Travel grant (1800\$) to attend SCRAM Asia Pacific 2018 in Wellington, by InternetNZ

2017-2018 Research grant, 15,000NZ\$ (GST excl.) on the project, entitled “**Current State of Broadband Usage in New Zealand Rural Communities**”, by InternetNZ. Lead PI: Dr William liu

2017-2018 Travel grant (3000\$) to attend IEEE GlobeCom17 in Singapore, by InternetNZ

2016-2017 AUT Faculty Mid-Career Excellent Researcher Award (5000\$)

2016-2017 Travel grant (5000\$) to attend IEEE INFOCOM16 in San Francisco, by InternetNZ

2016-2017 AUT Mid-Career Research Grant (25,000\$) to support a one-year PhD scholarship for the project, entitled ‘*Internet of Loving Things*’

2015 International Telecommunication Networks and Applications Conference (ITNAC 2015) Student Travel Grant (1200\$), Sydney, Australia

2014 Australasian Telecommunication Networks and Applications Conference (ATNAC 2014) Student Travel Grant (1000\$), Melbourne, Australia

2014 AUT Learning and Teaching Development Fund (LTDF) Grant for Green Teaching Badges Initiative II (3200\$)

2013 AUT Learning and Teaching Development Fund (LTDF) Grant for Green Teaching Badges Initiative I (4000\$)

2012 Learning and Teaching Development Fund (LTDF) Fellowship fund for Greener and Smarter Computing in AUT Campus Initiative (15000\$)

2012 Learning and Teaching Enabled by Technology (LATENT) grant for Greener and Smarter Computing in AUT Campus Initiative (5000\$)

2012 New Zealand Vodafone Special Fund for Sustainable Mobile Education (SustainMe) Initiative (10000\$)

The funding applications are under review:

- *Explore the pain-relieving effect and mechanism of intelligent acupuncture for knee osteoarthritis (PREMIER4KOA) to reduce the chance of disability or becoming disabled for middle-aged and older adults, submitted to Maurice and Phyllis Paykel Trust Funding Call and IDEATE ID is 14417, – Dr Kelvin Wang (Postdoc Researcher, PI), Professor Dr Jun Lu (Co-PI), and Dr William Liu (Co-PI)*
- A Data-driven Intelligent Electric Vehicle Traveling and Charging Management System Toward a Zero-Carbon Future for Aotearoa New Zealand, New Zealand Royal Society Te Apārang, Catalyst Seeding General, PI
- Trustworthy and Privacy-preserving Collaborative Control Technologies for Vehicular IoT, New Zealand Royal Society Te Apārang, Catalyst Seeding Japan and New Zealand Project, PI

Membership:

Technical

- The Founding and current Chair of IEEE New Zealand North Section Special Interest Group on Humanitarian Technology (SIGHT) Group since November 2020
- The Founding and current Chair of IEEE Vehicular Technology Society (VTS) New Zealand North Chapter since April 2018
- Member of IEEE Vehicular Technology Society since 2017
- Member of the Institute of Electrical and Electronics Engineers (IEEE) and its Communication Society (ComSoc) since 2005
- Member of the IEEE Education Society since 2016
- Member of IEEE Computer Society since 2015
- Member of the IEEE Technical Committee on Green Communications and Computing (TCGCC) since 2011
- Member of the Technical Committee on Big Data (TCBD), IEEE ComSoc since 2015
- Member of the IEEE Technical Committee on Scalable Computing (TCSC) since 2015
- Member of Health Informatics New Zealand (HiNZ)
- Member of the Disaster eHealth Community, AUT
- Member of the AUT Sustainability Research Cluster
- Member of the New Zealand Science, Technology, Engineering, and Mathematics Tertiary Education Centre (STEM-TEC) - <https://stemtec.aut.ac.nz/>
- Founding member of the Australasian Networking and Applications Conference (ATNAC) New Zealand Society
- Founding Member of the Networking and Security Research Laboratory (NSRL), AUT
- Founding Member of the Intelligent Vehicular Technology (IVT) Research Group, AUT

Faculty and School Boards

- Member of Postgraduate Study Board in the Faculty of Design and Creative Technologies (DCT), AUT
- Member of DCT Postgraduate Exam Board
- Member of Undergraduate Study Board of School of Engineering, Computer and Mathematical Sciences (SECMS)
- Member of Undergraduate Exam Board of SECMS
- Chair of MCIS/ BCIS(Hons) Thesis Grade Recommendation Committee in SECMS
- Chair of Postgraduate Pre-Exam Board, CMS cluster.

Journal editorship and conference/workshop organizing committee

- Guest Editor for Series (open call for whole year since 2020 March) on Data Driven Intelligence, Sustainability and Systems, the new journal of Intelligent and Converged Networks. It is an international journal co-published by the International Telecommunication Union (ITU) and Tsinghua University Press (TUP). The journal website: <http://icn.tsinghuajournals.com/EN/0000-0000/home.shtml>
- Guest Editor for IEEE Access, Special Issue on "Towards Service Centric Internet of Things (IoT): From Modelling to Practice" (2018 - 2019)
SI website: <http://ieeaccess.ieee.org/special-sections/towards-service-centric-internet-of-things-iot-from-modeling-to-practice/>
- Guest Editor for the MDPI Future Internet Special Issue on "Communications and Computing for Sustainable Development Goals"
SI website: http://www.mdpi.com/journal/futureinternet/special_issues/Sustainable_Development_Goals
- Guest Editor for the MDPI Future Internet Special Issue on "Massive MIMO Communication and Networking Systems"
SI website: http://www.mdpi.com/journal/futureinternet/special_issues/networking-systems
- Guest Editor for AIMS Electronics and Electrical Engineering, Special Issue on "Mobile and Wireless Technologies for Sustainable Mobility and Transportation System" (2018-2019).
SI website: <http://www.aimspress.com/newsinfo/843.html>
- Editorial Board Member of [MDPI Future Internet Journal](#) since 2015
- Guest Editor of Special Issue on Communications and Computing for Sustainable

Development Goals in MDPI journal of Future Internet in 2017

- Guest Editor of Special issue on Sustainable Wireless Networks, Hindawi Journal of Mobile Information System in 2016
- General Chair of the Special Track on Communications and Computing for Sustainable Development Goals ([ComCom4SDG](#)), associated with IEEE International Conference of Environmental Engineering (ICEE 2018), March 12-14, 2018, Milan, Italy
- General Chair of the 2nd International Workshop on Data Intensive Communications for Sustainable Development ([DICCSD2017](#)), associated with IEEE International Telecommunication Networks and Applications Conference ([ITNAC2017](#)), 22-24 November 2017, Melbourne, Australia
- General Executive Chair of 2016 IEEE [CyberSciTech/DataCom/DASC/PICom](#), 8-12 August, 2016, Auckland, New Zealand
- General Chair of International Workshop on Data Intensive Communications for Sustainable Development (DICCSD2016), associated with IEEE DataCom2016, 8-12 August, 2016, Auckland, New Zealand
- Program Vice Chair, and Chair for Demo and Poster sessions for IEEE International Conference of Green Computing and Communications ([GreenCom2015](#)), 11-13 December, 2016, Sydney, Australia

PART 2

2a. Total number of peer reviewed publications and patents	Journal articles	Books, book chapters, books edited	Conference proceedings	Patents
	25	7	79	n/a

2b. Research publications and dissemination

Peer-reviewed journal articles

1. M. Xiang, **W. Liu**, E. Lai, J. Gutierrez, L. Chiaraviglio and J. Wu, "Broadband usage for rural communities in the North Island of Aotearoa New Zealand," in Intelligent and Converged Networks, vol. 3, no. 3, pp. 244-259, September 2022, doi: 10.23919/ICN.2022.0021.
2. Rashmi Munjal, **William liu**, Xuejun Li, Jairo Gutierrez, J. and Peter Chong, "Multi-Attribute Decision Making for Energy-Efficient Public Transport Network Selection in Smart Cities". Future Internet, 14(2), doi: 10.3390/fi14020042
3. Naseer, Salman, **William Liu**, Nurul I. Sarkar, Muhammad Shafiq, and Jin-Ghoo Choi. "Smart City Taxi Trajectory Coverage and Capacity Evaluation Model for Vehicular Sensor Networks." Sustainability 13, no. 19 (2021): 10907.
4. Cao, Yue, Omprakash Kaiwartya, Xiaodong Xu, **William Liu**, Jaime Lloret, Yuanwei Liu, and Yuan Zhuang. "IEEE Access Special Section Editorial: Toward Service-Centric Internet of Things (IoT): From Modeling to Practice." IEEE Access 9 (2021): 91259-91264.
5. Luca Chiaraviglio, Fabio D'Andreagiovanni, **William Liu**, Jairo Gutierrez, Nicola Blefari-Melazzi, Kim-Kwang Raymond Choo, "Multi-Area Throughput and Energy Optimization of UAV-aided Cellular Networks Powered by Solar Panels and Grid," in IEEE Transactions on Mobile Computing, doi: 10.1109/TMC.2020.2980834.
6. **William Liu**, Farhaan Mirza, Ajit Narayanan and Seng Souliga, "Is it possible to cure Internet addiction with the Internet?", in AI & SOCIETY, 35(1), 245-255. Doi: 10.1007/s00146-018-0858-0
7. Bo Ma, Jinsong Wu, Shuang Song, **William Liu**, "Assuring Privacy-Preservation in Mining Medical Text Materials for COVID-19 Cases - A Natural Language Processing Perspective," in Open Journal of Internet Of Things (OJIOT), 6(1), Pages 6-13, 2020, https://www.ronpub.com/ojiot/OJIOT_2020v6i1n02_BoMa.html
8. Rasheed, A., Chong, P., Ho, I., Li, X. and **Liu, W.** (2019) An Overview of Mobile Edge Computing: Architecture, Technology and Direction," is accepted to be published in the KSII Transactions on Internet and Information Systems.
9. Naseer, S., **Liu, W.**, & Sarkar, N. I. (2019). Energy-Efficient Massive Data Dissemination through Vehicle Mobility in Smart Cities. Sensors, 19(21), 4735.

10. Wu, J., Guo, S., Huang, H., **Liu, W.** and Xiang, Y. (2018). Information and Communications Technologies for Sustainable Development Goals: State-of-the-Art, Needs and Perspectives, IEEE Communications Surveys and Tutorials
11. Chiaraviglio, L., Blefari-Melazzi, N., **Liu, W.**, Gutierrez, J. , Van de Beek, J., Birke, R., Chen, L., Idzikowski, F., Kilper, D., Monti, P., Bagula, A., and Wu, J. 5G in rural and low-income areas : Is it feasible?, IEEE Communications Standards Magazine, Vol. 1, No. 3, 50-57, 2017 doi:[10.1109/MCOMSTD.2017.1700023](https://doi.org/10.1109/MCOMSTD.2017.1700023)
12. Chiaraviglio, L., Lavinia, A., Dellolmo, P., **Liu, W.**, Gutierrez, J. Cianfrani, A., Polverini, M., Lerouzic, E. and Listani, M. (2017). Lifetime-Aware ISP Networks: Optimal Formulation and Solutions. IEEE/ACM Transactions on Networking, Vol. 25, No. 3, 1924-37, 2017. doi:[10.1109/TNET.2017.2665782](https://doi.org/10.1109/TNET.2017.2665782)
13. Hossain M., A., Sarkar, N. I., Gutierrez, J. and **Liu, W.** (2017). Performance Study of Block ACK and Reverse Direction in IEEE 802.11n using a Markov Chain Model, Journal of Network and Computer Applications, Elsevier, Vol. 78, 170-79, 2017. doi:[10.1016/j.inca.2016.11.029](https://doi.org/10.1016/j.inca.2016.11.029)
14. Chiaraviglio, L., Cianfrani, A., Listanti, M., **Liu, W.**, & Polverini, M. (2016). Lifetime-Aware Cloud Data Centers: Models and Performance Evaluation. Energies, 9(6), 470. doi:[10.3390/en9060470](https://doi.org/10.3390/en9060470)
15. Xiang, M., **Liu, W.**, & Bai, Q. (2016). A fuzzy logic-based sustainable and trusted routing for P2P enabled smart grid. International Journal of Computational Science and Engineering, 13(2), 165-174. doi:[10.1504/IJCSE.2016.078445](https://doi.org/10.1504/IJCSE.2016.078445)
16. Xiang, M., **Liu, W.**, Bai, Q., & Al-Anbuky, A. (2016). The critical role of structural hole in forming trust for Securing Wireless Sensor Networks. International Journal of Information, Communication Technology and Applications, 2(1), 66. doi:[10.17972/ijicta20162127](https://doi.org/10.17972/ijicta20162127)
17. Usman, A. B., **Liu, W.**, Bai, Q., & Narayanan, A. (2015). Trust of the same: Rethinking trust and reputation management from a structural homophily perspective. International Journal of Information Security and Privacy, 9(2), 13-30. doi:[10.4018/IJISP.2015040102](https://doi.org/10.4018/IJISP.2015040102)
18. Xiang, M., **Liu, W.**, Bai, Q., & Al-Anbuky, A. (2015). Avoiding the Opportunist: The Role of Simmelian Ties in Fostering the Trust in Sensor-Cloud Networks. International Journal of Distributed Sensor Networks, 2015, 1-11. doi:[10.1155/2015/873941](https://doi.org/10.1155/2015/873941)
19. Tauch, S., Liu, W., & Pears, R. (2015). Evaluating the Cascade Effect in Interdependent Networks via Algebraic Connectivity. International Journal of Information, Communication Technology and Applications, 1(1), 55-68. doi:[10.17972/ajicta2015115](https://doi.org/10.17972/ajicta2015115)
20. Rakjit, C., **Liu, W.**, & Gutierrez, J. (2014). An Energy Efficient Scheduling Manager for Cloud-Based Mobile Navigation Applications. International Journal of Business Data Communications and Networking, 10(2), 47-68. doi:[10.4018/ijbdcn.2014040104](https://doi.org/10.4018/ijbdcn.2014040104)
21. Yang, M. L., Al-Anbuky., & **Liu, W.** (2014). An Authenticated Key Agreement Scheme for Wireless Sensor Networks. Journal of Sensors and Actuators, 3(3), 181-206. doi:[10.3390/jsan3030181](https://doi.org/10.3390/jsan3030181)
22. Xiang, M., Bai, Q., & **Liu, W.** (2014). Trust-based Adaptive Routing for Smart Grid Systems. Special Issue of Multiagent-based Societal Systems in Journal of Information Processing, doi: [10.2197/ipsjip.22.210](https://doi.org/10.2197/ipsjip.22.210)
23. **Liu, W.**, Sirisena, H., & Pawlikowski, K. (2012). A new BlueGreen methodology for designing next generation networks. International Journal of Internet Protocol Technology, 2012 Vol.7, No.1 pp.15 – 25. doi:[10.1504/IJIPT.2012.047586](https://doi.org/10.1504/IJIPT.2012.047586)
24. **Liu, W.** (2011). Pervasive Dependability in Wireless Cloud Networking: a BlueGreen Topological Control Approach. China Communications, 8(6), 1-10. [EID: 2-s2.0-81255143940](https://doi.org/10.1007/s11464-011-0110-0)
25. **Liu, W.**, Pawlikowski, K., & Sirisena, H. (2011). Algebraic connectivity metric for spare capacity allocation problem in survivable networks. Computer Communication (COMCOM) Journal, Volume 34(Issue 12), 1425-1435. doi:[10.1016/j.comcom.2010.12.012](https://doi.org/10.1016/j.comcom.2010.12.012)

Peer reviewed books, book chapters, books edited

1. Alhaddadin, F. A., Gutierrez, J. and **Liu, W.** (2019). The Collaborative Use of Patients' Health-Related Information, Advances in Data Communications and Networking for Digital Business Transformation, Saha, D. (Editor), IGI Global.

2. Qi, R., **Liu, W.**, Gutierrez, J., Narang, M. (2017). Sustainable and Resilient Network Infrastructure Design for Cloud Data Centres, Engineering and Management of Data Centers: an IT Service Management Approach, J. M. Gómez, M. Mora, R. O'Connor, W. Nebel & M. Raisinghani (Editors), Springer-Verlag, London, UK, 227-59, 2017 doi:[10.1007/978-3-319-65082-1](https://doi.org/10.1007/978-3-319-65082-1)
3. Xiang, M., **Liu, W.**, Bai, Q., and Al-Anbuky, A. (2016). Dynamic Trust Elective Geo Routing to Secure Smart Grid Communication Networks. In Ayaz Ahmad, & Naveed Ul Hassan (Eds.), Smart Grid as a Solution for Renewable and Efficient Energy (pp. 323-343). Hershey, PA, USA: IGI Global. doi:[10.4018/978-1-5225-0072-8.ch014](https://doi.org/10.4018/978-1-5225-0072-8.ch014)
4. Tauch, S., **Liu, W.**, & Pears, R. (2016). Measuring Cascading Failures in Smart Grid Networks. In Ayaz Ahmad, & Naveed Ul Hassan (Eds.), Smart Grid as a Solution for Renewable and Efficient Energy (pp. 208-225). Hershey, PA, USA: IGI Global. doi:[10.4018/978-1-5225-0072-8.ch009](https://doi.org/10.4018/978-1-5225-0072-8.ch009)
5. Alhaddadin, F. A., **Liu, W.**, & Gutierrez, J. (2015). A User Data Profile-Aware Policy-Based Network Management Framework in the Era of Big Data. In S. Yu, X. Lin, J. Misic, & U. S. Shen (Eds.), Networking for Big Data (pp. 1-432). Chapman and Hall/CRC.
6. Luo, B., **Liu, W.**, & Al-Anbuky, A. (2015). Energy-Aware Survivable Routing in Ever-Escalating Data Environments. In S. Yu, X. Lin, J. Misic, & X. S. Shen (Eds.), Networking for Big Data (pp. 1-432). Chapman and Hall/CRC.
7. Foye, E., Prasad, S., Sivan, S., Faatamai, S., Yan, W. Q., & **Liu, W.** (2013). A Framework of Content and Context Based Network Monitoring. In Managing Trust in Cyberspace (pp. 371-388). Taylor & Francis Group. doi:[10.1201/b16318-18](https://doi.org/10.1201/b16318-18)

Refereed conference proceedings

1. Yue Cao, Celimuge Wu, Xu Zhang, **William Liu**, Linyu Peng and Muhammad Khalid. "MEGEE: Mobile Edge computing Geared v2x for E-mobility Ecosystem", IEEE Wireless Communications & Networking Conference, Marrakech, Morocco, 2019
2. Rashmi Munjal, **William Liu**, Xue Jun Li, Jairo Gutierrez, "Big Data Offloading using Smart Public Vehicles with Software Defined Connectivity", 22nd Intelligent Transportation Systems Conference, ITSC 2019
3. Naseer, S., **Liu, W.**, Sarkar, N., Chong, P., Lai, E., Ma, M., Prasad, R.V., Rizavi, S., Danh, T.C., Chiaraviglio, L., Qadir, J. Cao, Y., Wu, J, Lutui,R. and Manzoor, S. (2018). A Sustainable Marriage of Telcos and Transp in the Era of Big Data: Are We Ready? 3rd EAI International Conference on Smart Grid and Innovative Frontiers in Telecommunications (SmartGift)
4. Maria E. Villapol, **William Liu**, Jairo Gutierrez, Junaid Qadir, Steven Gordon, Jin Tan, Luca Chiaraviglio, Jinsong Wu, Wenjun Zhang, A Sustainable Connectivity Model of the Internet Access Technologies in Rural and Low-Income Areas, SMARTGIFT 2018, Auckland, New Zealand, April 2018.
5. Filip Idzikowski, Luca Chiaraviglio, **Willam Liu**, Jaap van de Beek, Future Internet Architectures and Sustainability: An Overview, IEEE International Conference on Environmental Engineering, Milan, Italy, March 2018.
6. Latapu, P., Lutui, R., **Liu, W.**, Gutierrez, J. Song, J. Chiaraviglio, L., Wu, J. and Bagula, A. (2018). Bridging the Digital Divide In Tonga Through A Sustainable Multi-tenancy Broadband Infrastructure: Are We Ready? The Special Track on Communications and Computing for Sustainable Development Goals (ComCom4SDG) in The 2018 IEEE International Conference of Environmental Engineering
7. Cao, Y., Zhang, X., **Liu, W.**, Cao, Y., Chiaraviglio, L., Wu, J. and Putrus, G. (2018). Reservation Based Electric Vehicle Charging Using Battery Switch. IEEE International Conference on Communications (ICC), Kansas City, USA, May 2018.
8. Balasubramanian, V., Kouvelas, N., Chandra, K., Prasad, R.V. , Voyiatzis, A.G., **Liu, W.** (2018). A Unified Architecture for Integrating Energy Harvesting IoT Devices with the Mobile Edge Cloud, 2018 IEEE 4th World Forum on Internet of Things (WF-IoT) - *accepted to publish*
9. Chiaraviglio, L., **Liu, W.**, Gutierrez, J. and Blefari-Melazzi, N. (2017). Optimal Pricing Strategy for 5G in Rural Areas with Unmanned Aerial Vehicles and Large Cells, Proceedings of the 27th International Telecommunication Networks and Applications Conference (ITNAC), Melbourne, Australia, November, 2017

10. Munjal, R., **Liu, W.**, Li, X.J., Gutierrez, J., and Furdek, M. (2017) Sustainable Massive Data Dissemination by Using Software Defined Connectivity Approach, Proceedings of the 27th International Telecommunication Networks and Applications Conference (ITNAC), Melbourne, Australia, November, 2017
11. Villapol, M., **Liu, W.**, Gutierrez, J., Chiaraviglio, L., Sathiseelan, A., Wu, J., Bagula, A., Qadir, J., Song, J., Zhang, W., Gregory, M., and Wu, J. (2017) Connecting the Unconnected 10% of New Zealanders by 2025: Is a MahiTahi Approach Possible? Second International Workshop on Data Intensive Computing and Communications for Sustainable Development. Proceedings of the 27th International Telecommunication Networks and Applications Conference (ITNAC), Melbourne, Australia, November, 2017
12. Naseer, S., **Liu, W.**, Sarkar, N., Chong, P., L. Edmund, R.V. Parsad (2017). A Sustainable Vehicular Based Energy Efficient Data Dissemination Approach. Proceedings of the 27th International Telecommunication Networks and Applications Conference (ITNAC), Melbourne, Australia, November, 2017.
13. Narang, M., **Liu W.**, Gutierrez, J. & Chiaraviglio, L. (2017). A Cyber Physical Buses-and-Drones Mobile Edge Infrastructure for Large Scale Disaster Emergency Communications", Proceedings of the 2nd International Workshop on Communication, Computing, and Networking in Cyber Physical Systems (CCN-CPS 2017), Atlanta, USA, June, 2017
14. Narang, M., Xiang, M., **Liu, W.**, Guierrez, J., Chiaraviglio, L., Sathiseelan, A. and Merwaday, A. (2017). UAV-assisted Edge Infrastructure for Challenged Networks, Proceedings of the IEEE International Conference on Computer Communications (IEEE INFOCOM 2017), Atlanta, USA, May, 2017
15. Munjal, R., **Liu, W.**, Li, J., Gutierrez, J. & Chong, P. (2017). Telco Asks Transp: Can You Give Me A Ride In the Era of Big Data?", Proceedings of the IEEE International Conference on Computer Communications (IEEE INFOCOM 2017), Atlanta, USA, May, 2017
16. Chiaraviglio, L., Blefari-Melazzi, N., **Liu, W.**, Gutierrez, J., Van De Beek, J., Birke, R., Chen, L., Idzikowski, F., Kilper, D., Monti, P. and Wu, J. (2016). 5G in Rural and Low-Income Areas: Are We Ready?, Proceedings of the 8th ITU Kaleidoscope Academic Conference, Bangkok, Thailand, November, 2016
17. Ma, J., Choo, K. K. R., Hsu, H. H., Jin, Q., **Liu, W.**, Wang, K., Zhou, X. (2016). Perspectives on Cyber Science and Technology for Cyberization and Cyber-Enabled Worlds. In 2016 IEEE 14th Intl Conf on Dependable, Autonomic and Secure Computing, 14th Intl Conf on Pervasive Intelligence and Computing, 2nd Intl Conf on Big Data Intelligence and Computing and Cyber Science and Technology Congress(DASC/PiCom/DataCom/CyberSciTech) (pp. 1-9). doi:10.1109/DASC-PiCom-DataCom-CyberSciTec.2016.17
18. Memon, A., **Liu, W.**, & Al-Anbuky, A. (2016). CatchMe If You Can: Enable Sustainable Communications Using Internet of Movable Things. In 2016 IEEE 14th Intl Conf on Dependable, Autonomic and Secure Computing, 14th Intl Conf on Pervasive Intelligence and Computing, 2nd Intl Conf on Big Data Intelligence and Computing and Cyber Science and Technology Congress(DASC/PiCom/DataCom/CyberSciTech) (pp. 947-952). doi:10.1109/DASC-PiCom-DataCom-CyberSciTec.2016.163
19. Luo, B., **Liu, W.**, & Al-Anbuky, A. (2016). SustainMe if you can: Sustainable transmission networking design for Big Data. In 2016 IEEE Conference on Computer Communications Workshops (INFOCOM WKSHPS) (pp. 265-270). doi:10.1109/INFOCOMW.2016.7562084
20. Qi, R., **Liu, W.**, Gutiérrez, J., Malik, A.W. (2016), Crash me if you can: Rethinking sustainable Data Center Networking from a topological perspective. In 2016 IEEE Conference on Computer Communications Workshops (INFOCOM WKSHPS) (pp. 265-270). doi:10.1109/INFOCOMW.2016.7562140
21. Usman, A., **Liu, W.**, Bai, Q., & Narayanan, A. (2016). Exploring the Role of Structural Similarity in Securing Smart Metering Infrastructure. In 2015 IEEE International Conference on Data Science and Data Intensive Systems (pp. 343-349). Sydney, Australia: IEEE DSDIS Proceedings. doi:10.1109/DSDIS.2015.95
22. Usman, A., **Liu, W.**, Bai, Q., & Narayanan, A. (2015). Revealing the role of topological transitivity in efficient trust and reputation system in smart metering network. In 2015 IEEE International Conference on Data Science and Data Intensive Systems (pp. 337-342). Sydney, Australia: IEEE. doi:10.1109/DSDIS.2015.114

23. Airehrour, D., Gutierrez, J., **Liu, W.**, & Wu, J. (2015). When Internet raised to the Things power: Are Energy Efficiency Standards Sufficient to Curb Carbon Footprints?. In Proceedings of the first IEEE International Workshop on Green Standardizations and Industry Issues for ICT and relevant Technologies (GSICT), the IEEE Global Communications Conference (GLOBECOM 2015). San Diego.
24. Xiang, M., **Liu, W.**, Bai, Q., & Al-Anbuky, A. (2015). Simmelian ties and structural holes: Exploring their topological roles in forming trust for securing wireless sensor networks. In The 14th IEEE International Conference on Trust, Security and Privacy in Computing and Communications (IEEE TrustCom-15). Helsinki, Finland: IEEE CPS Proceedings.
25. **Liu, W.**, Goldweber, M., & Clear, T. (2015). A Definition for a Sustainable Computing Educator. In The 6th Annual Conference of Computing and Information Technology Education and Research in New Zealand (CITRENZ) (pp. 55-59). Queenstown, New Zealand.
26. Chiaraviglio, L., Abbas, S., & **Liu, W.** (2015). To Sleep or Not to Sleep: Understanding the Social Behavior of Lifetime-Aware Networks. In Lecture Notes in Computer Science Vol. 9197 (pp. 262-272). Beijing, China: Springer Verlag. doi:10.1007/978-3-319-21786-4_23
27. Abbas, S., **Liu, W.**, Bai, Q., & Al-Anbuky, A. (2015). Whom You Know Matters: Relook Vehicle-to-Vehicle Communications from A Topological Perspective. In Lecture Notes in Computer Science (pp. 248-261). Beijing, China: Springer Verlag. doi:10.1007/978-3-319-21786-4_22
28. Tauch, S., **Liu, W.**, & Pears, R. (2015). Measuring cascade effects in interdependent networks by using effective graph resistance. In 2015 IEEE Conference on Computer Communications (INFOCOM) (pp. 683-688). doi:10.1109/INFOCOMW.2015.7179465
29. Alhaddadin, F., **Liu, W.**, & Gutierrez, J. (2015). A Policy-Based Network Management Approach for Greening the Cloud Infrastructure. In International Conference on Information Resources Management (Conf-IRM 2015). Ottawa, Ontario, Canada.
30. Xiang, M., Tauch, S., & **Liu, W.** (2015). Dependability and Resource Optimization Analysis for Smart Grid Communication Networks. In The 4th IEEE International Conference on Sustainable Computing and Communications (SustainCom 2014) (pp. 676-681). Sydney, Australia. doi:10.1109/BDCLOUD.2014.115
31. Alhaddadin, F., **Liu, W.**, & Gutierrez, J. (2015). A User Profile-Aware Policy-Based Management Framework for Greening the Cloud. In the 4th IEEE International Conference on Sustainable Computing and Communications (SustainCom 2014) (pp. 682-687). Sydney, Australia: IEEE. doi:10.1109/BDCLOUD.2014.116\
32. Tauch, S., **Liu, W.**, & Pears, R. (2015). Measuring cascade effects in coupled networks using algebraic connectivity. In 2014 Australasian Telecommunication Networks and Applications Conference, ATNAC 2014 (pp. 34-39). doi:10.1109/ATNAC.2014.7020870
33. Tauch, S., **Liu, W.**, & Pears, R. (2015). Inflicting cascade of failures in interdependent networks. In 2014 Australasian Telecommunication Networks and Applications Conference, ATNAC 2014 (pp. 12-16). doi:10.1109/ATNAC.2014.7020866
34. **Liu, W.** & Northover, M.(2014). A Badge of Honour. In McDonald, J, & Hegarty, B (Eds.), Rhetoric and Reality: Critical Perspectives on educational technology. (pp. 505-508). Dunedin, NZ: Ascilite.
35. Yang, M. L., Al-Anbuky., & **Liu, W.** (2014). Security of the Multiple-Key Blom's Key Agreement Scheme for Sensor Networks. In N. Cupens-Boulaiah, F. Cuppens, S. Jajodia, & A. A. El Kalam (Eds.), ICT Systems Security and Privacy Protection Vol. 428 (pp. 66-79). Marrakech, Morocco: Springer-Verlay GmbH, Berlin, Heideberg.
36. **Liu, W.** (2013). Architecturing the SmartGrid for energy efficiency and service resiliency: A BlueGreen Framework. In The Energy Conference 2013. Conference website.
37. Tauch, S., **Liu, W.**, & Pears, R. (2013). Cascade Effects in Coupled Networks. In The 12th New Zealand Computer Science Research Student Conference (NZCSRSC) (pp. 127-133). Hamilton, New Zealand.
38. Alhaddadin, F., **Liu, W.**, & Gutierrez, J. (2013). A Policy Based Management Approach for Greening the Cloud Infrastructure. In The 12th New Zealand Computer Science Research Student Conference (NZCSRSC) (pp. 8-12). Hamilton, New Zealand.
39. Rakjit, C., **Liu, W.**, & Gutierrez, J. (2013). A Greener Cloud-based Scheduling Algorithm for Improving the Energy Efficiency of Mobile Devices. In The 12th New Zealand

- Computer Science Research Student Conference (NZCSRSC) (pp. 1-7). Hamilton, New Zealand.
40. Yang, M. L., Al-Anbuky, A., & **Liu, W.** (2013). The Multiple-Key Blom's Scheme for Key Establishment in Mobile Ad Hoc Sensor Networks. In Proceedings of the 19th Asia-Pacific Conference on Communications (APCC2013) (pp. 423-427). Bali Island, Indonesia.
 41. Liu, W. (2013). Architecturing the SmartGrid for energy efficiency and service resiliency: A BlueGreen Framework. In The Energy Conference 2013, Wellington, New Zealand.
 42. Xiang, M., Bai, Q., & **Liu, W.** (2013). Self-adjustable trust-based energy efficient routing for smart grid systems. In Proceedings of 2012 IEEE/WIC/ACM International Conference on Web Intelligence and Intelligent Agent Technology Workshop on Green Computing and Sustainable Society Vol. 3 (pp. 378-382). Macau, China. doi:10.1109/WI-IAT.2012.89
 43. Xiang, M., **Liu, W.**, & Bai, Q. (2013). Trust-based geographical routing for smart grid communication networks. In Proceedings of third IEEE International Conference on Smart Grid Communications (SmartGridComm 2012) (pp. 704-709). Tainan City, Taiwan. doi:10.1109/SmartGridComm.2012.6486069
 44. Gutierrez, J., & **Liu, W.** (2012). A Policy-Based Management Framework for Dependable and Efficient Cloud Computing. In 4th Digital Earth Summit. Wellington.
 45. **Liu, W.** (2012). Cascade effects in national cyber-infrastructures protection. In 4th Digital Earth Summit 2012. Wellington.
 46. Yang, M. L., Al-Anbuky, A., & **Liu, W.** (2012). A Fast and Efficient Key Agreement Scheme for Wireless Sensor Networks. In Proceedings of the Eighth International conference on Wireless and Mobile Communications 2012 (pp. 231-237). Italy. –Best Paper Reward
 47. **Liu, W.**, Sirisena, H., & Pawlikowski, K. (2011). Building Dependable Next Generation Networks (NGNs): A New BlueGreen Design Philosophy. In Proceedings of 2011 Australasian Telecommunication Networks and Applications Conference (pp. 1-6). Melbourne, Australia.
 48. Liu, W. (2011). Pervasive Dependability In Wireless Cloud Networking: A Novel BlueGreen Topological Control Approach. In Proceedings of 2011 IEEE International Conference on Cloud Computing and Intelligence Systems (pp. 321-326). Beijing China. doi:10.1109/CCIS.2011.6045083
 49. Liu, W. (2011). Greening Wireless Sensor Networks (WSNs): A New BlueGreen Approach. In Proceedings of IEEE workshop on Instrumentation and Measurement Society New Zealand Chapter Workshop on Smart Sensors, Measurement and instrumentation (pp. 14). Auckland, New Zealand.
 50. Luo, B., & **Liu, W.** (2011). The Sustainability and Survivability Network Design for Next Generation Cloud Networking. In Proceedings of International Conference on Cloud and Green Computing 2011 (pp. 555-560). Sydney, Australia.
 51. **Liu, W.**, Sirisena, H., Pawlikowski, K., & Willig, A. (2010). A New Topological Index for Capacity Allocation Problem in Survivable Networks, in Proceedings of Australasian Telecommunication Networks and Applications Conference (ATNAC 2010) (pp. 31-36).
 52. **Liu, W.**, Sirisena, H., & Pawlikowski, K. (2010). A Novel Distributed Resilience Matrix for Arbitrary Failures in Spare Capacity Allocation. In Proceedings of the 7th International Conference on Information, Communications and Signal Processing (ICICS 2009) (pp. 1-5). Macau.
 53. **Liu, W.**, & Al Anbuky, A. (2010). Achieving survivability and security in ever-changing WSNs' world. In the 2010 IEEE New Zealand Wireless Workshop, Wellington, New Zealand.
 54. **Liu, W.**, Sirisena, H., & Pawlikowski, K. (2009). A Novel Resilience Matrix for Survivable Routing in a Distributed Control Architecture. In Proceedings of the 15th Asia-Pacific Conference on Communications (APCC 2009) (pp. 648-651). Shanghai, China
 55. **Liu, W.**, Sirisena, H., & Pawlikowski, K. (2009). Ant-Based Survivable Routing Scheme for Shared Path Protection. In Proceedings of the Australasian Telecommunication Networks and Applications Conference (ATNAC) (pp. 332-337). Adelaide, Australia.
 56. **Liu, W.**, Sirisena, H., & Pawlikowski, K. (2009). Efficacy of Fiedler Value versus Nodal Degree in Spare Capacity Allocation. In Proceedings of the 15th Asia-Pacific Conference on Communications (APCC 2009) (pp. 678-681). Shanghai, China.

57. **Liu, W.**, Sirisena, H., & Pawlikowski, K. (2009). FoF-R Ant-based Survivable Routing Using Distributed Resilience Matrix. In Proceedings of 21st International Teletraffic Congress (ITC 21), Traffic and Performance Issues in Networks of the Future (pp. 1-6). Paris.
58. **Liu, W.**, Sirisena, H., Pawlikowski, K., & McInnes, A. (2009). Utility of Algebraic Connectivity Metric in Topology Design of Survivable Networks. In Proceedings of the 7th International Conference on the Design of Reliable Communication Networks (DRCN 2009) (pp. 131-138). Washington DC, USA.
59. **Liu, W.**, Sirisena, H., & Pawlikowski, K. (2009). Weighted Algebraic Connectivity Metric for Non-Uniform Traffic in Reliable Network Design. In Proceedings of the International Workshop on Reliable Networks Design and Modelling (RNDM2009) (pp. 1-6). St. Petersburg, Russia.