

2016 Annual Research Outcome Report of Liverpool Logistics, Offshore and Marine (LOOM) Research Institute



Contact details

Professor Jin Wang
Professor of Marine Technology
Director of LOOM Research Institute
School of Engineering, Technology and Maritime Operations, Liverpool John Moores University,
Byrom Street, L3 3AF, UK
Tel. +44 151 231 2445
Email: j.wang@ljmu.ac.uk

Dr Alan Wall
Reader in Maritime Studies
Co-director of LOOM Research Institute
School of Engineering, Technology and Maritime Operations, LJMU
Byrom Street, L3 3AF, UK
Tel. +44 151 231 2493
Email: a.d.wall@ljmu.ac.uk

Professor Zaili Yang
Professor of Maritime Transport
Co-director of LOOM Research Institute
School of Engineering, Technology and Maritime Operations, LJMU,
Byrom Street, L3 3AF, UK
Tel. +44 151 231 2531
Email: z.yang@ljmu.ac.uk

LOOM Website: <https://www.ljmu.ac.uk/research/centres-and-institutes/faculty-of-engineering-and-technology-research-institute/loom>

Email: loom@ljmu.ac.uk

LOOM members in 2016

Dr David R. Allanson (DRA)
Dr Musa Bashir (MB)
Dr Eduardo Blanco-Davis (EBD)
Dr Steve Bonsall (SB)
Dr Robert Darlington (RD)
Prof. Stephen Fairclough (SF)
Prof. Ian Jenkinson (IJ)
Dr Karl Jones (KJ)
Dr Christos Kontovas (CK)
Dr Dante Ben Matellini (DBM)
Dr Marco Messina (MM)
Dr Constantine Michailides (CM)
Dr Trung Thanh Nguyen (TTN)
Dr Jun Ren (JR)
Dr Charles Roberts (CR)
Dr Mehdi Seddighi (MS)
Dr Alan Wall (AW)
Prof. Jin Wang (JW)
Prof. Zaili Yang (ZY)
Dr Lihong Zhang (LZ)
Dr Qian Zhang (QZ)

Other members involved in PhD supervision at LOOM

Prof. D. Andrews (DA), UCL, UK
Dr A. Cunningham (AC), Trelleborg Offshore UK Ltd, UK
Mr. P. Davies (PD)
Miss P. Floode (PF)
Prof. W. (Vlad) Kaczynski (WK), Univ. of Washington
Ms B. Kelly (BK)
Prof. K. X. Li (KXL), Chung Ang Univ.
Dr S. Miri Lavasani (SML)
Prof. C. Morecroft (CM), Pharmacy and Biomolecular Sciences
Dr. A. Ng (AN), University of Manitoba, Canada
Mr. G. Phylip-Jones (GPJ)
Dr R. Riahi (RR), Columbia Shipmanagement, Germany
Dr F. Saeed (FS)
Dr Y. Wang (YW), Napier University
Prof. S. Yang (SY), De Montford University

It has been identified that the emphasis in 2017 is:

1. To develop national and international collaboration.
2. To ensure sustainable research growth.
3. To focus on research output quality and research impact generation.

1. Research publications (only those already published in 2016)

The following are the outputs published in 2016 (for details, see Appendix 1):

- 2 edited book.
- 5 book chapters.
- 25 SCI-cited refereed journal papers.
- 2 other academic journal papers.
- 20 refereed conference papers.
- 1 other publication.

2. Doctoral, postdoctoral and international research visiting projects (completed, on-going and started in 2016)

2.1 Research projects completed in 2016

PhD projects

1. Dr H. Al Yami, "Decision making analysis for integrated risk management framework of maritime container port infrastructure and transportation systems" (2010-2016), funded by Saudi Arabian Government. (ZY, RR, JW)
2. Dr M. Ha, "Port logistics performance measurement" (2012-2016), partially funded by EU project ENRICH. (ZY, AN, SB)

LOOM researchers (doctoral/postdoctoral) in 2016

Ayman Alghanmi
H. Al Yami
Y. Ancele
M. Asuguo
G. Asuelimen
A. A. Atiyah
A. Babader
A. Bury
Dr S.N. Chaurasia
S.L. Chandler Črnigoj
I. Deplano
Miss S.Q. Fan
D. Franks
M. Ha
Wanzul Bin Abdul Halim
S. Haddad
I. C. Ikewete
A. Isola
S. Kavakeb
B. Kelly
C. Kelly
C. Li
S. Loughney
A. Makki
F.A. Najib
I. Nawaz
H. Oraith
D. Paraskevadakis
F. Saad
A. Y. Taha
K. Takrouiri
A.Y. Usman
M. Usman
A. Waddah
C. Wan
L. Wang
R. Wang
T. Wang
Z. Yang
D. Yazdani

Visiting researchers

Prof. L.T. Bui
Miss S.Q. Fan
Dr C. T. Ha
Dr A. Huang
T.T. Le
Dr. T. H. Nguyen
V. T. Vu

Visiting professor

RAEng Professor Ron Bell,
ESC Ltd, UK
RAEng Professor/Dr Paul
Davies, LR
LJMU Visiting Professor
Xinping Yan, Wuhan
University of Technology,
China

3. Dr S. Haddad, "A study of the implementation of relationship marketing (RM) approach in supply chain performance", funded by Arab Academy for Science, Technology & Maritime Transport. (JR, JW, AW)
4. Dr C.Y. Li, "A system dynamics approach for chemical supply chain risk management: modelling and simulation", partially funded by EU projects ENRICH and REFERENCE. (JR, IJ, JW)
5. Dr D. Paraskevadakis, "An importance-performance analysis of intermodal freight transport chain infrastructures and strategic decision making towards optimisation" (2011-2016), funded by EU project WEASTFLOWS. (JR, JW, AW)

Visiting researcher projects

6. Miss S.Q. Fan, "Risk and resilience assessment of large passenger ships" (1/2016 – 7/2016), from Wuhan University of Technology and funded by China Scholarship Council and EU. (EBD, JW)
7. Dr A. Huang (Jan–July 2016) Optimisation of distribution centre locations. Visiting Scholar project, funded by an EU Marie Curie project. (ZY)
8. Prof. L.T. Bui "Multi-objective optimisation in dynamic environments" (6/2016), from Le Quy Don University, funded by Royal Academy of Engineering (TTN, JW, IJ, ZY)
9. Dr. C.T. Ha "Real-time optimisation for loading goods to containers" (6-11/2016), from Le Quy Don University, funded by Royal Academy of Engineering (TTN, JW, IJ, ZY)
10. Dr. T.H. Nguyen "Vehicle fleet sizing in ports under uncertainty" (8-11/2016) , from Le Quy Don University, funded by Royal Academy of Engineering (TTN, JW, IJ, ZY)
11. Mr. V.T. Vu "Vehicle routing in urban logistics" (11/16-2/17) , from Le Quy Don University, funded by Royal Academy of Engineering (TTN, JW, IJ, ZY)
12. Mr. T.T. Le "Vessel stowage planning for ports under uncertainty" (9/16 – 4/17), from Vietnam Maritime University, funded by the British Council (TTN, ZY, IJ, JW).

Postdoctoral projects

13. Dr S. Chaurasia, "Sustainable maritime logistics research using operational research" (2015-2016). (TTN, *et al.*).
14. Dr S. Kavakeb, "Transport system simulation and optimisation" (2015-2016), funded by BC. (TTN, *et al.*)

2.2 On-going research projects in 2016

Doctoral projects

15. W.M. Abdul Halim, "Shipping network analysis" (2003-2017), funded by Universiti Malaysia Terengganu. (ZY, TTN, YW)
16. F. Ahmad Najib, "Development of decision making techniques for analysing the designation of the Northern Sea Route (NSR)" (2013-2017), funded by Universiti Malaysia Terengganu. (DBM, JW, WK)
17. A. Alghanmi, "The movement of liquid bulk cargo from the gulf countries to the world" (2013-2017), funded by the Saudi Government. (ZY, RR, AC)
18. M. Asuguo, "Development of an efficient planned maintenance framework for marine and offshore machineries operating under highly uncertain environments" (2012-2017). (JW, GPJ, LZ, RR).
19. A.A. Atiyah, "A Novel Harmonised Decision Making Support System (HDMSS) to Enhance the Reliability and Efficiency of Port Pilotage Operations" (2014-2017), funded by the Saudi Government. (ZY, *et al.*)
20. A. Bury, "Short sea shipping as part of an East/West axis in European logistics" (2011-2017), funded by EU. (AW, JW, JR)
21. D. Franks, "Risk assessment of royal fleet auxiliary services" (2009-2017), funded by MoD. (JW, AW, ZY)
22. I. C. Ikewete, "A risk based framework for design, inspection and maintenance of offshore wind farm turbines" (2012-2017). (EBD, *et al.*)
23. A. Ishola, "Safety Modelling Approach for risk management of petroleum and gas refineries" (2014-2017). (DBM, *et al.*)
24. S. Loughney, "Offshore e-integrity case" (2014-2017), funded by LJMU and EU project WEASTFLOWS. (JW, *et al.*)
25. I. Nawaz, "Risk based verification of offshore installations on the United Kingdom continental shelf" (2012-2017), funded by Lloyds Register. (DBM, JW, AC)
26. K.S. Sang, "Group route optimisation through city transport simulation" (2015 - 2018), funded by the Red Ninja and LJMU. (ZY, *et al.*)
27. A.Y. Taha, "Use of IT for onboard training of marine officers" (2011-2017), funded by Arab Academy (AW, MJ, BK).
28. A.Y. Usman, "Research on quantifying risk assessment of container terminal operations" (2012-2017). (JR, JW, KJ)
29. M. Usman, "Health Management of Marine Engine" (2015-2019), funded by Lloyds Register and LJMU. (ZY, JW, RR)
30. A. Waddah, "Research on evaluating logistics performance and benchmarking container business in Egypt" (2008-2016), partially funded by Arab Academy for Science, Technology & Maritime Logistics. (JR, CR, JW)
31. C. Wan, "Risk assessment of container supply chains" (2015-2018), funded by Chinese government, EU and LJMU (dual PhD) (ZY, *et al.*)
32. L. Wang, "Research on risk assessment methods for healthcare supply chain in hospital - An investigation of the feasibility of integrating risk and Lean & Agile management" (2015-2018). (JR, JW, CM)
33. Miss R. Wang, "Discrete-event simulation for the bin-packing and berth planning optimisation for ports" (2015-18), funded by LJMU (TTN, SK, ZY).
34. Miss. T. Wang, "Transport adaptation to climate change" (2015 – 2018), funded by AECOM and LJMU. (ZY, *et al.*)
35. Z. Yang, "Maritime risk assessment using gaming theory" (2015-2018), funded by LJMU and EU. (ZY, *et al.*)

2.3 Research projects started in 2016

Doctoral projects

36. Y. Ancele, "Logistics routing in the physical Internet context" (2016-19), funded by LJMU Scholarship. (BM, TTN)
37. G. Asuelimen, "An enhanced risk assessment model for offshore seismic survey in hostile environment: A case study of Arctic oil and gas exploration" (2016-2019), funded by Saudi government. (EBD, *et al.*)
38. S.L. Chandler Crnigoj, "Binaural sound applications for sensor technology" (2016-2019). (KJ, *et al.*)
39. B. Kelly, "An analysis into the process of selection and retention of deck cadets in the UK Merchant Navy" (2016-2019). (EBD, *et al.*)
40. C. Kelly, "Investigation into the uses of life cycle analysis as an alternative method of certifying tidal power schemes" (2016-2019), funded by a scholarship from the Faculty of Engineering and Technology. (EBD, *et al.*)

41. I. Deplano, “Automation technologies for logistics in the Physical Internet context” (2016-19), funded by LJMU Scholarship. (TTN, *et al.*)
42. A. Makki, “Studying the impact of LNG container tanks on LNG logistics supply chain using simulation” (2016-19). (TTN, JR)
43. H. Oraith, “The impact of human element factors on pilotage operations safety” (2016 – 2019), funded by the Libyan Government. (EBD, *et al.*)
44. K. Takroui, “Study of unsteady turbulence and drag reduction over patterned surfaces” (2016 – 2019). (MS, *et al.*)
45. D. Yazdani, “Dynamic and robust optimisation” (2016-19), funded by LJMU Scholarship. (TTN, *et al.*)

3. LOOM monthly seminars in 2016

13 LOOM monthly seminars were organised in 2016. The following external speakers delivered their presentations at LOOM’s monthly seminars:

- Prof. Matthew H. Kane, Maritime Engineering Department, Texas A&M University at Galveston, USA.
- Prof Rima Mickeviciene, and Associate Professor Vasilij Djakov, Faculty of Marine Technology and Natural Sciences, Klaipeda University, Lithuania
- Prof. Yamamoto Kazuhiro, Department of Mechanical Science and Engineering, Faculty of Engineering, Nagoya University, Japan
- Prof. Lam Thu Bui, Dean of Faculty of Information Technology, Le Quy Don Technical University (LQDTU).
- Miss Rui Zhang, Institute for Transport Study, University of Leeds.
- Dr Mohd Mustafa Al Bakri Abdullah, Manager of the Center of Excellence Geopolymer & Green Technology (CEGeoGTech), Faculty of Engineering Technology, University of Malaysia Perlis (UniMaP)
- Dr. Chi Trung Ha, Chief of Laboratory on Multimedia and Intelligent Computation, Le Quy Don Technical University (LQDTU).

The detailed LOOM monthly seminars in 2016 are shown in Appendix 2.

4. Research grants in 2016

4.1 External grants

Grants completed in 2016

• FETCH: Future Edu. & Training in Computing (EU, 2013-2016)	€29,548 (of €1.127k)	(KJ)
• Investigation of inland waterway safety (Royal Society, 2014-16)	£12,000	(JW, <i>et al.</i>)
• REFERENCE – Risk assessment (EU, 2012-1016)	€384,300	(JW, <i>et al.</i>)
• TSB VoyagOR (Technology Strategy Board, 2014-2016)	£20,000	(ZY, <i>et al.</i>)
• UK-ASEAN partnership in ICT (British Council, 2015-2016)	£40,166	(TTN, <i>et al.</i>)
• Westflows – freight movements in NWE (EU, 2011-2016)	£320,000 (of €4.5m)	(JW, <i>et al.</i>)

On-going grants in 2016

• An open-source modelling platform (Nippon Foundation, 2015-16)	\$47,162	(Matthews, IJ)
• Climate Adaptation in Transportation (AECOM, 2015-2017)	£30,000	(ZY <i>et al.</i>)
• ENRICH – Integrated Container Supply Chains (EU, 2013-1017)	€592,000	(ZY, <i>et al.</i>)
• Maritime logistics research (UK BEIS, 2015-2017)	£300,000	(TTN, <i>et al.</i>)
• Risk-based maintenance (LR, 2014-2017)	£5,700	(ZY, JW)
• Route Optimisation through Simulation (Red Ninja Ltd, 2015-18)	£30,000	(ZY)
• SeaConAZ - Exploring Sea Containers (RC of Norway, 2015-18)	£25,000 out of £700,000	(ZY)
• VP award “Functional safety (Royal Acad. of Eng., 2015-2018)	£30,000	(JW)

Grants started in 2016

• Computational resources from National Supercomputer	£5,000	(MS)
• EU H2020 Marie Curie RISE network (PRIGeoC, 2016-2020)	€108,000 (out of €516k)	(JW, <i>et al.</i>)
• Newton research collaborations programme (RAEng, 2016-2017)	£24,000	(TTN)
• VP award “Maritime Technology” (Royal Acad. of Eng., 2016-18)	£30,000	(JW)

Grants awarded in 2016

• H2020 RESET – Rel. and Safety Eng. and Tech. (2017-2021)	€1,471,500	(JW, <i>et al.</i>)
• Newton Fund ‘Modelling and optimising rail operations (2016-17)	£18,000	(TTN, <i>et al.</i>)
• Seat allocation for rail services (Dept. for Transport (2016-17)	£21,000	(TTN, <i>et al.</i>)

5. Evidence of national and international peer esteem in 2016

a. Invited plenary addresses/keynote paper/presentation at international conferences/research seminar

- “Structural Health Monitoring in Offshore Wind Technology”, Invited Keynote Presentation in the 2nd International Conference on Renewable Energies Offshore, RENEW2016, 24 - 26 October 2016, Lisbon, Portugal. (CM)
- “How can risk assessment and decision-making be used in smart and green marine industries?”, International Conference on Smart and Green Technology for the future of Marine Industries (SMATECH 2016), 25-26 April 2016, Glasgow, UK. (JW)
- “Data uncertainty modelling in maritime transport”, 2016 International Conference on Quality, Reliability, Risk, Maintenance, and Safety Engineering (QR2MSE 2016) in conjunction with the 11th World Congress on Engineering Asset Management (WCEAM 2016), 25-28 July, 2016, Sichuan, China. (JW)

- “Development of Decision Making Techniques for Analyzing the Designation of the Northern Sea Route (NSR)”, Opening address at International Workshop on Maritime Safety and Arctic Shipping (MSAS), 4-7 December 2016, Wuhan, China. (JW, Najib, MB)
- “Challenges and opportunities of OBOR - One Belt and One Road”, Opening Keynote Address in International Conference on The Silk Road Economic Belt and the 21st Century Maritime Silk Road for Transportation and Global Supply Chain, 1-2 December, 2016, Melbourne, Australia. (ZY)
- “Uncertainty and risks of maritime supply chains”, Opening Keynote Address in the 6th IEEE International Conference on Logistics, Informatics and Service Sciences, July 24 -27, Beijing, China. (ZY)

b. Other invited presentations

- “Supply chain management”, Invited presentation in the research seminar of Zhejiang Sci-Tech University, Hangzhou, China, 12 September 2016. (JR)
- “Challenges and Developments in Maritime Safety and Security Assessment”, The University of Southampton and Lloyds Register, 26th May 2016. (JW)
- “Development of intelligent predictive models for crowding on trains using data-driven methodologies”, Invited presentation at the RRUKA data projects dissemination event, London, UK, 20 September 2016. (QZ)
- “Development of intelligent predictive models for crowding on trains using data-driven methodologies”, Invited presentation at the RRUKA Annual Conference 2016, London, UK, 3 November 2016. (QZ)
- “Computational Intelligence and Some Examples in Real-life Application”, Invited presentation at Zhejiang University, Hangzhou, China, 30 November 2016. (QZ)
- “Computational Intelligence and Its Application in Various Engineering Problems”, Invited presentation at the 4th UESTC International Forum of Young Scholars, University of Electronic Science and Technology of China, Chengdu, China, 26 November 2016. (QZ)
- “Development of maritime security risk analysis techniques”, The LMS Research Seminar of Hong Kong Polytechnic University, 28 November, Hong Kong. (ZY)
- “Maritime Safety, Security and Climate Risk Assessment”, The Lloyd Register Research Seminar jointly with University of Southampton, 10 November, Southampton, UK. (ZY)

c. Participation in journal editorial boards

- International Journal of Agile Systems and Management. (JR)
- International Journal of Ocean Systems Engineering (2013-date). (JR)
- Member of the Editorial Board of Journal of Marine Science and Application. (JW)
- Member of the Editorial Board of Maritime Policy and Management. (JW)
- Member of the World Maritime University Journal. (JW)
- Deputy Editor of Journal of Marine Science and Technology (since 2013). (JW)
- Member of the Editorial Board for the Journal of Mathematical Control Science and Applications. (KJ)
- Member of the Editorial Board for the International Journal of Intelligent Systems and Applications in Engineering. (KJ)
- Member of the Editorial Board for the American Journal of Neural Networks and Applications. (KJ)
- Board of International Reviewers of Comunicar. (KJ)
- Member of the Scientific Board for the Informatica Economica Journal. (KJ)
- Comunicar. Co-Editor with R. Comas. Special Issue on Plagiarism. (KJ)
- Editorial Board Member of Artificial Intelligence and Applications. (QZ)
- Editorial Board Member of Artificial Intelligence Research. (QZ)
- Editorial board member (IEEE Transactions of Affective Computing). (SF)
- Member of the Editorial Board for IEEE Transactions on Affective Computing. (SF)
- Editor of Springer’s Lecture Notes in Computer Science book Vol. 9597. (TTN)
- Editor of Springer’s Lecture Notes in Computer Science book Vol. 9598. (TTN)
- Member of Editorial Board, Frontiers in Robotics and AI, Section Computational Intelligence. (TTN)
- Member of Editorial Board of International Advanced Research Journal in Science, Engineering and Technology. (TTN)
- Member of Editorial Board of Journal of Transport Information and Safety. (ZY)
- Member of Editorial Board of Journal of Traffic and Transportation Engineering (English Edition) (JTTE). (ZY)
- Member of Editorial Board of Asia-Pacific Journal of Business & Commerce (2016 – date). (ZY)
- Member of Journal of Korean Trade. (ZY)
- Editorial Board of Member (EBM) of book series in Shipping, Port and Maritime Logistics by Anthem Press. (ZY)
- Editorial Board of Members (EBM) of Asian Social Science. (ZY)
- Section Associate Editor of the Maritime Economist. (ZY)
- Member of Editorial Board of Journal of Traffic and Transportation Engineering (JTTE). (ZY)
- Member of Editorial Board of Shocks and Vibrations (S&V) (2013 - date) (SCI-cited). (ZY)
- Associate Editor of IMA Journal of Management Mathematics (JMM) (SCI-cited). (ZY)
- Member of Editorial Board of Asian Journal of Shipping and Logistics (AJSL). (ZY)
- Member of Editorial Board of Advanced Shipping and Ocean Engineering (ASOE). (ZY)
- Member of Editorial Board of International Journal of Marine Science and Engineering (IJMSE). (ZY)
- Member of Editorial Board of Journal of Shipping and Ocean Engineering (JSOE). (ZY)
- Guest Editor of International Journal of Shipping and Transport Logistics (IJSTL) (SCI-cited). (ZY)
- Guest Editor of Transportation Research Part E: Logistics and Transport Review (TRE) (SCI-cited). (ZY)
- Guest Editor of Transportation Research Part D: Transport and Environment (TRD) (SCI-cited). (ZY)
- Guest Editor of Growth and Change: An International Journal (G&C) (SSCI-cited). (ZY)

d. Participation in national or international advisory, review, funding, standards or planning bodies

- Member of committee for Deck Officer Qualifications & Standards of IAMI. (AW)
- Board member of International Society of Offshore and Polar Engineers (ISOPE). (CM)
- Member of the UK EPSRC peer review college of experts. (CM, ZY, *et al.*)
- Executive Committee member as Secretary for 2016-2017 of Offshore Technology Symposium of ISOPE. (CM)
- Advisor on the Ports and Terminals Advisory Group for UK Trade & Investment (UKTI). (IJ)
- Member of the IMO Formal Safety Assessment Experts Group. (JW)

- Reviewer of the Executive Agency for Higher Education, Research, Development and Innovation Funding (Romania) and the National Centre for Research and Development (Poland). (JW)
- The external expert reviewer for EU funded project LEANWIN (2013-2017). (JW)
- Evaluator/overseas expert of the Romanian National Council for Scientific Research (2016-2020). (ZY)
- Advisor of the UK Government Office for Science on the “Future of the Sea” project (2016). (ZY)

e. Learned society involvement

- Reviewer to IMarEST’s Cobalt project. (EBD)
- Committee member of the North West Branch of the IMarEST. (GPJ & RR)
- Committee member of the Consortium of Manufacturing Engineering Heads. (IJ)
- Member of Council for the Institute of Measurement and Control. (KJ)
- Chairman of Maritime Transportation Safety, European Safety and Reliability Association (ESRA). (JW)
- Member of the Maritime Innovation Committee of the Royal Institution of Naval Architects (since 2016). (JW)
- Member of Council for the Institute of Measurement and Control. (KJ)
- Hon Treasurer NW Outport Honourable Company of Master Mariners (HCMM). (SB)
- Member of Education and Training Committee of HCMM. (SB)
- Director Conway Maritime Trust. (SB)
- President of Psychophysiology in Ergonomics (an international working group of the International Ergonomics Association). (SF)
- Member of the IEEE Task Force on Evolutionary Computation in Dynamic and Uncertain Environments. (TTN)
- Founding director of International Association of Transport, Trade and Service Studies (IATSS). (ZY)
- Member of International Association of Maritime Economics (IAME). (ZY)

f. External PhD examinership

- 1 PhD examination at Northumbria University. (JR)
- 2 PhD examinations at the University of Greenwich and Norwegian University of Science and Technology. (JW)
- 1 MRes examination at the University of Manchester. (MS)
- 1 PhD examination at Northumbria University Newcastle. (RD)
- 1 PhD examination at the University of Plymouth. (SB)
- 1 PhD examination at the University of Liverpool. (ZY)

g. Involvement of conference organisation

- Co-organiser of the 19th European Conference on the Applications of Evolutionary Computation, April 2016. (TTN)
- Chairman of the 13th conference track “Evolutionary Algorithms in Stochastic and Dynamic Environments (EvoSTOC)” as a part of the international EvoStar 2016 conference. (TTN)
- Program Co-Chair, Annual Conference on Physiological Computing Systems, Lisbon, Portugal, 27-28 July 2016. (ZY)

h. Prizes/honours

- One paper shortlisted for Lloyd’s Science of Risk Prize in 2016 (“A novel flexible model for piracy and robbery assessment of merchant ship operations”, Reliability Engineering & System Safety, Vol.155, 2016, 196–211). (Pristrom, Yang, Wang, Yan)
- Most read in ScienceDirect’s Top 25 for Swarm and Evolutionary Computation, 2016. (TTN)
- Listed in top Most Cited (since 2012) Swarm and Evolutionary Computation Articles 2016 (ranked 3rd). (TTN)
- QR2MSE Conference Best Paper Award, paper title “Measurement and management of KPIs under uncertainty: A case of shipping management”, awarded in International Conference on Quality, Reliability, Maintainability and Safety, 25 – 28 July, Jiuzhaigou, China, 2016. (ZY, Qu, Asquco, IJ, JW)

i. Consultancy

- Peel Ports, UK. (TTN, *et al.*)
- Petrovietnam Technical Services Corporation, Vietnam. (TTN, *et al.*)
- Greenport, Vietnam (TTN, *et al.*)
- Southport and Ormskirk hospital. (TTN)
- AECOM. (ZY)
- Transport for Greater Manchester. (ZY)

j. Others

- Working in partnership with Risktec Solutions delivering distance learning and face to face modules. (DBM)
- Co-author of EU Commission Report: Assessment of Emerging Technological Tools and Resources for Learning Purposes. (Dr R. Bartlett, Dr. P. Johnson and C. Robinson all of LJMU were co-authors). (KJ)
- Hydrodynamic modelling of Remotely Operated Vehicles (ROV) in rough seas: First principles research funded, endorsed and applauded by SMD and INNOVATE, UK. It has significantly increased the profitability of an international company (SMD). (MB)
- Outstanding reviewer of Applied Soft Computing journal (QZ)
- External Examiner BSc/MSc programmes BCA College Athens via University of Plymouth. (SB)
- Special Issue editor (ACM Transactions of Computer-Human Interaction). (SF)
- Special Issue editor (IEEE Computer). (SF)
- Research results have been applied to Port optimisation for Peel Ports, Port optimisation for Greenport, Vietnam, Container loading optimisation for Petrovietnam Technical Services Corporation, Vietnam, and Optimal routing in hospitals, Southport and Ormskirk hospital, UK. Research impacts have been generated accordingly. (TTN)

Appendix 1: Publications published in 2016

Books

1. Squillero G., Burelli P., Nguyen T.T., *et al.* (editors) (2016), Applications of Evolutionary Computation part I, Lecture Notes in Computer Science vol. 9597, ISBN 978-3-319-31204-0.

2. Squillero G., Burelli P., Nguyen T.T., *et al.* (editors) (2016), Applications of Evolutionary Computation part II, Lecture Notes in Computer Science vol. 9598, ISBN 978-3-319-31152-4.

Book chapters

3. Dobbins C. and Fairclough S.H. (2016), "Lifelogging technologies to detect negative emotions associated with cardiovascular disease", In Al-Jumeily D. *et al.* (Eds.), Applied Computing in Medicine and Health, Edition, Elsevier, 27-44.
4. John A., Yang Z., Riahi R. and Wang J. (2016), "A decision support system for the assessment of seaports' security under fuzzy environment", In Modelling, Computing and Data Handling Methodologies for Maritime (Eds by Konstantopoulos C. and Pantziou G.), a volume of a series Advances on Learning, Analytics and Intelligent Computing Systems Transportation, Springer.
5. Kontovas C.A. and Psaraftis H.N. (2016), "Transportation emissions: Some basics", in Psaraftis, H.N. (ed.), "Green Transportation Logistics. In Search of Win-Win Solutions," Springer International Series in Operations Research and Management Science, Volume 226, ISBN: 978-3-319-17174-6, DOI: 10.1007/978-3-319-17175-3_2.
6. Kontovas C.A., Panagakos G., Psaraftis H.N. and Stamatopoulou E. (2016), "Being green on sulphur: targets, measures and side-effects", in Psaraftis, H.N. (ed.), "Green Transportation Logistics. In Search of Win-Win Solutions," Springer International Series in Operations Research and Management Science, Volume 226, ISBN: 978-3-319-17174-6, DOI: 10.1007/978-3-319-17175-3_10.
7. Psaraftis H.N. and Kontovas C.A. (2016), "Green maritime transportation: Speed and route optimization", in Psaraftis, H.N. (ed.), "Green Transportation Logistics. In Search of Win-Win Solutions," Springer International Series in Operations Research and Management Science, Volume 226, ISBN: 978-3-319-17174-6, DOI: 10.1007/978-3-319-17175-3_9.

Refereed academic journal papers (SCI cited)*

8. Al-Yami H., Yang Z., Ramin R., Bonsall S. and Wang J. (2016), "Advanced uncertainty modelling for container port risk analysis", Accident Analysis and Prevention, DOI: 10.1016/j.aap.2016.08.007. IF: 2.07
9. Babader A., Ren R., Wang J. and Jones K., (2016), "A system dynamics approach for enhancing social behaviours regarding the reuse of packaging", Expert Systems with Applications, Vol.46, 417-425. IF: 2.981
10. Blanco-Davis E. and Zhou P. (2016), "Life cycle assessment as a complementary utility to regulatory measures of shipping energy efficiency", Ocean Engineering, Vol.128, 94-104. IF: 1.488
11. Datta, S., Mahfouf, M., Zhang, Q., Chattopadhyay, P.P. and Sultana, N. (2016), "Imprecise knowledge based design and development of titanium alloys for prosthetic applications", Journal of the Mechanical Behavior of Biomedical Materials, Vol.53, 350-365. IF: 2.876
12. Ewing, K., Fairclough, S.H. and Gilleade, K. (2016), "Evaluation of an adaptive game that uses EEG measures validated during the design process as inputs to a biocybernetic loop", Frontiers in Human Neuroscience, Vol.10, article no:223, 13 pages, doi: 10.3389/fnhum.2016.00223. IF: 3.634
13. Gohomene G., Yang Z., Bonsall S., Maistralis L. Wang J. and Li K. (2016), "The attractiveness of ports in West Africa: some lessons from shipping lines' port selection", Growth and Change, Vol.47, No.3, 416-426. IF: 0.877
14. He S., He K. and Seddighi M. (2016), "Laminarisation of flow at low Reynolds number due to streamwise body force", Journal of Fluid Mechanics, Vol.809, 31-71. IF: 2.514
15. John, A., Yang, Z., Riahi, R. and Wang, J. (2016), "A risk assessment approach to improve the resilience of a seaport system using Bayesian networks", Ocean Engineering, Vol.111, 136-147. IF: 1.488
16. Karimirad M. and Michailides C. (2016), "V-shaped semisubmersible offshore wind turbine subjected to misaligned wave and wind", Journal of Renewable and Sustainable Energy, Vol 8(2), 023305-1-023305-17 (American Institute of Physics-AIP). IF: 0.961
17. Kavakeb S., Nguyen T.T., Yang Z., Jenkinson I. (2016), "Evolutionary fleet sizing in static and uncertain environments with shuttle transportation tasks - the case studies of container terminals", IEEE Computational Intelligence Magazine, Vol.11, No.1, 55-69. IF: 3.647
18. Li C., Nguyen T.T., Yang M., Mavrovouniotis M., Yang S. (2016), "An adaptive multipopulation framework for locating and tracking multiple optima", IEEE Transactions on Evolutionary Computation, Vol.20, 590-605. IF: 5.908
19. Li C., Ren J. and Wang H. (2016), "A system dynamics simulation model of chemical supply chain transportation risk management systems", International Journal of Computers & Chemical Engineering, Vol.89, 71-83. IF: 2.581
20. Ma F., Chen Y.W., Huang Z.C., Yan X.P., Wang J. (2016), "A novel approach of collision assessment for coastal radar surveillance", Reliability Engineering & System Safety, Vol.155, 179-195. IF: 2.498
21. Ma F., Chen Y.W., Yan X.P., Chu X.M., Wang J., (2016), "A novel marine radar targets extraction approach based on sequential images and Bayesian Network", Ocean Engineering, Vol.120, 64-77. IF: 1.488
22. Michailides C., Gao Z. and Moan T. (2016), "Experimental study of the functionality of a semisubmersible wind turbine combined with flap-type wave energy converters", Renewable Energy, Vol.93, 675-690. IF: 3.404
23. Michailides C., Gao Z. and Moan T. (2016), "Experimental and numerical study of the response of the offshore combined wind/wave energy concept SFC in extreme environmental conditions", Marine Structures, Vol.50, 35-54. IF: 1.729
24. Ng A.K.Y., Yang Z., Cahoon S., and Lee P. (2016), "Port, maritime logistics and regional development", Growth and Change. Vol.46, No.3, 346-348. IF: 0.877
25. Ng A.K.Y., Wang T., Yang Z., Li K.X. and Jian C.M. (2016), "How is business adapting to climate change impacts appropriately? Insight from the commercial port sector", Journal of Business Ethics, DOI: 10.1007/s10551-016-3179-6. IF: 1.837
26. Pristrom S., Yang Z., Wang J. and Yan X.P. (2016), "A novel flexible model for piracy and robbery assessment of merchant ship operations", Reliability Engineering & System Safety, Vol.155, 196-211. IF: 2.498
27. Psaraftis H.N., Wen M. and Kontovas C.A. (2016), "Dynamic vehicle routing problems: Three decades and counting", Networks, Vol.67(1), 3-31. IF=1.141
28. Sang L.Z., Yan X.P., Wall A., Wang J. and Mao Z., (2016), "CPA Calculation Method based on AIS Position Prediction", Journal of Navigation, Vol.69, 1409-1426. IF: 1.267
29. Yang Z. and Qu Z. (2016), "Development of quantitative maritime security assessment: a 2020 vision", IMA Journal of Management Mathematics, Vol.27, No.4, 453-470. IF: 1.837
30. Zhang D., Yan X.P., Zhang J.F., Yang Z. and Wang J. (2016), "Use of fuzzy rule-based evidential reasoning Approach in the navigational risk assessment of inland waterway transportation systems", Safety Science, Vol.82, 352-260. IF: 2.157
31. Zhang L. Akwai C. and Zhang Y. (2016), "Exploring how complex solution-based capabilities (CSC) are developed and integrated in engineering companies", Production Planning and Control, 727-739. doi.org/10.1080/09537287.2016.1166281. IF: 1.53
32. Alkhatib S., Darlington R., Nguyen T., (2015) "Logistics Service Providers (LSPs) evaluation and selection: Literature review and framework development", Strategic Outsourcing: An International Journal, Vol.8(1), 102 - 134. IF: 0.88 (not included in 2015 Annual LOOM Research Outcome Report)

Other refereed journal papers

* IF: Impact factor.,

33. Setiadi H., and Jones K.O, (2016), "Power system design using firefly algorithm for dynamic stability enhancement", Indonesian Journal of Electrical Engineering and Computer Science, Vol.1, No.3, 446-455.
34. Paraskevaidakis D., Bury A., Wang J., Ren J, Bonsall S., Jenkinson I., "The impact of transport infrastructure projects on sustainable development within a major logistics gateway in North West England", Logistics & Sustainable Transport, Vol.7(1), 2016, 18-40.

Refereed conference papers

35. Abujaafar K.M., Qu Z., Yang Z., Wang J., Nazir S. and Øvergård K.I. (2016), "Use of evidential reasoning for eliciting Bayesian subjective probabilities in human reliability analysis", 11th International Conference on System of Systems Engineering (SoSE), 12-16 June, Kongsberg, Norway.
36. Fan S.Q., Zhang D., Blanco-Davis E., Wang J. and Yan X.P., "Current status and framework of China's inland passenger ship safety system", 2016 IEEE International Conference of Logistics, Informatics and Service Science (LISS2016), 24-27 July, Beijing, China.
37. Ha M. and Yang Z. (2016), "A new hybrid decision making framework for prioritising port performance improvement strategies", International Association of Maritime Economics Conference 2016 (IAME2016), 23-26 August, Hamburg, Germany.
38. Huang A.Q., Yao L.J., Yang Z., Shi X.L. and Lee T.W. (2016), "Finance, Trade and Infrastructure of OBOR: Current Status, Challenges and Opportunities", International Conference on The Silk Road Economic Belt and the 21st Century Maritime Silk Road for Transportation and Global Supply Chain, 1-2 December, Melbourne, Australia.
39. Huang A.Q., Zhang Z.J., Hua G., Shi X.L. and Yang Z. (2016), "Applying interval knowledge to facilitate the seaport container throughput volume forecasting", 6th IEEE International Conference on Logistics, Informatics and Service Sciences, 24 -27 July, Sydney, Australia.
40. Li C., Ren J., Wang J. and Yang Z. (2016), "Dynamic risk management of chemical supply chains", International Association of Maritime Economics Conference 2016 (IAME2016), 23-26 August, Hamburg, Germany.
41. Li C., Ren J., Wang J., Chang D. and Yang Z. (2016), "Hazard identification in chemical supply chains: The development of a novel taxonomy", 6th IEEE International Conference on Logistics, Informatics and Service Sciences, 24 -27 July, Sydney, Australia.
42. Lin N., Hjelle H., Cullinane K., Bergqvist R., Eidhammer O., Wang Y.H., Qu Z. and Yang Z., (2016), "Upstream buyer consolidation and downstream short sea shipping in the Asia-Europe sea container supply chain – An explorative study", International Association of Maritime Economics Conference 2016 (IAME2016), 23-26 August, Hamburg, Germany.
43. Lin N., Hjelle H., Cullinane K., Bergqvist R., Eidhammer O., Wang Y.H., Qu Z. and Yang Z. (2016), "Potential solutions to upstream buyer consolidation in the China-Europe container trades", 6th IEEE International Conference on Logistics, Informatics and Service Sciences, 24 -27 July, Sydney, Australia.
44. Lu G., Zhu H., Ren J. (2016) "The effect of entrepreneur human capital on innovation performance of cluster enterprises: Theoretical and Empirical Research", The Third European Academic Research Conference on Global Business, Economics, Finance and Banking (EAR16Paris Conference), ISBN: 978-1-943579-24-2, 1-3 July 2016, Paris, France.
45. Michailides C., Gao Z. and Moan T. (2016), "A sensitivity study of wave and wind induced responses of the combined energy concept SFC based on experimental measurements", 26th International Offshore and Polar Engineering Conference, Rhodes, Greece, ISOPE Vol.1, 537-544.
46. Panapakidis I.P., Michailides C., and Angelides D.C. (2016), "Missing wind speed data: clustering techniques for completion and computational intelligence models for forecasting", 26th International Offshore and Polar Engineering Conference, June 26-July 2, Rhodes, Greece, ISOPE Vol.1, 503-510.
47. Paraskevaidakis D., Bury A., Wang J., Ren J., Bonsall S., Jenkinson J., "The impact of transport infrastructure projects on sustainable development within a major logistics gateway in North West England", the 13th International Conference on Logistics & Sustainable Transport, 16 - 8 June 2016, Celje, Slovenia.
48. Salleh N. H. M., Othman M.R., Riahi R., Yang Z. and Wang J. (2016), "Adopting a fuzzy rule-based Bayesian network (FRBBN) for analyzing and predicting a vessel's arrival punctuality in liner operations", International Association of Maritime Economics Conference 2016 (IAME2016), August 23-26, Hamburg, Germany.
49. Sang K.S., Zhou B., Yang P. and Yang Z. (2016), "A survey on urban traffic optimisation for sustainable and resilient transportation network", 9th International Conference of Development in E-Systems Engineering, 31 August – 2 September, Liverpool and Leeds, UK.
50. Wan C.P., Yang Z., Zhang D, Fan S.Q. and Yan X.P. (2016), "Resilience in transportation systems: A systematic review and future directions", International Conference on The Silk Road Economic Belt and the 21st Century Maritime Silk Road for Transportation and Global Supply Chain, 1-2 December, Melbourne, Australia.
51. Wang G., Yang Z.S., Zhang D., Huang A. and Yang Z. (2016), "Application of Bayesian networks in analysing tanker shipping bankruptcy risks", International Association of Maritime Economics Conference 2016 (IAME2016), August 23-26, Hamburg, Germany.
52. Loughney S., Wang J., Lau D. and Minty D., "Asset integrity case development for normally unattended offshore installations: Bayesian network modelling", European Safety and Reliability Conference (ESREL 2016), 25-29 September, University of Strathclyde, Glasgow, Scotland.
53. Ventikos N.P., Stavrou D.I. and Yang Z. (2016), "Use of fuzzy inference approach to estimate maritime security level", 3rd International Conference on Maritime Technology and Engineering, 4 – 6 July, Lisbon, Portugal.
54. Wang R., Nguyen T.T., Kavakeb S., Yang Z. and Li C. (2016), "Benchmarking dynamic three-dimensional bin packing problems using discrete-event simulation", 19th European Conference, EvoApplications, 30 March - 1 April, Porto, Portugal (Lecture Notes in Computer Science, 9598 :266-279).

Other publication

55. Alghanmi A., Yang Z., Riahi R. and Cunningham A. (2016), "Criticality assessment of maritime petroleum transportation network", the 9th Saudi Student Conference in the UK, 13-14 February, Birmingham, UK. (Best presentation award).

Appendix 2: LOOM monthly seminars in 2016

Time: 10.00-11.15, first Wednesday of each month from February 2016.

Venue: Room 1.21, LOOM Research Institute, James Parsons Building, Byrom Street, Liverpool John Moores University, Liverpool, L3 3AF, UK

Each internal speaker will give a talk of 30 minutes (excluding question time) while an external speaker is usually given 60 minutes (excluding question time).

In 2016, LOOM has delivered 13 research seminars with 6 external researchers providing invited presentations.

First Quarter – Chairing person: **Dr. J. Run**/Dr. Rob Darlington

3rd February

Mr Atiyah, “A proposed methodology for evaluating the reliability value of a pilotage operation using Fuzzy Analytical Hierarchy Process (FAHP) and Fuzzy Evidential Reasoning (FER) algorithms”

Ms Sandra Haddad, “The impact of the marketing/SCM cross-functional integration approach on supply chain performance”

25th February, 15.00-15.45, Professor Matthew H. Kane, Maritime Engineering Department, Texas A&M University at Galveston, USA.

“Research activities at the Maritime Engineering Department, Texas A&M University at Galveston”

2nd March

Mr. Min-Ho Ha, “A hybrid approach to the modelling of port performance measurement”.

Mr Sachchida Chaurasia, “Dominating Tree Problem”.

15th March, 11.00-12.00

Prof Rima Mickeviciene, and Associate Professor Vasilij Djackov, Faculty of Marine Technology and Natural Sciences, Klaipeda University, Lithuania, “Research at Klaipeda University”

Second Quarter – Chairing person: **Dr. E. Blanco-Davis**/Dr. A. Wall

6th April

Ms Shiqi Fan “Research network on flexible risk assessment and decision science”

Mr. David Franks, “Risk assessment of royal fleet auxiliary services”

4th May

Dr Anqiang Huang, “One belt one road – optimisation of global logistic distribution centres”.

Mr. Sean Loughney, “Offshore e-integrity case”.

1st June

Mr. Lei Wang, “Research on risk assessment methods for healthcare supply chain in hospital - An investigation of the feasibility of integrating risk and Lean & Agile management”

Professor Yamamoto Kazuhiro, Department of Mechanical Science and Engineering, Faculty of Engineering, Nagoya University, Japan, “Evacuation dynamics in fire: Modelling and applications”

Third Quarter – Chairing person: **Dr. D.B. Matellini**/Prof. Jin Wang

6st July

Prof. Lam Thu Bui, Dean of Faculty of Information Technology, Le Quy Don Technical University (LQDTU), “Computational Intelligence and Applications”

Abstract: In this talk, an overview of Faculty of Information Technology (FIT)/Le Quy Don Technical University (LQDTU), will be presented. Next, I will introduce research related works at my office and particularly focusing on the computational intelligence (CI), a new branch of artificial intelligence. I will also discuss the CI applications to fundamental problems in maritime logistics such as scheduling, resource allocation and planning. Finally, the collaboration between my research group and Dr Nguyen's group are briefly discussed during the talk

7th September

Miss Rui Zhang, Institute for Transport Study, University of Leeds, “Air pricing and frequencies in the presence of HSR in China”

Abstract: High-speed rail (HSR) is developing at an unprecedented speed in China, however, its impact on air market is under-investigated. An ex-post analysis of HSR's influence on air pricing and frequencies is carried out considering 30 routes with different lengths using panel data. Our results indicate that inter-modal competition can induce air to reduce fares and frequencies greatly, air fares are 42.9% lower and air services are 60.2% less on routes with HSR competition; air fares are higher on routes with higher air-frequency/HSR-frequency. With respect to air service levels, higher HSR frequency can induce air to lower its frequency, air travel time efficiency compared with HSR can affect air fares and frequencies

significantly. Inter-temporal discrimination for air fares can also be influenced by HSR competition, they reach their minimum more in proximity of departure on routes with HSR services. We also find that inter-modal competition can influence air fares' distribution over distances, fares seem to reach their minimum at shorter length on routes without HSR services than on routes with HSR services.

Fourth Quarter – Chairing person: **Dr. Z. Yang**/Dr. T.T. Nguyen

5th October

Dr. Constantine Michailides, “Modelling in Offshore Engineering - Numerical modelling and response analysis of large rated offshore wind turbines”

Mr. Ambisire Y. Usman, “Research on quantifying risk assessment of container terminal operations”

Dr. Chi Trung Ha “Optimising loading good to containers by solving the 3D bin packing problems”

2nd November

Mr. Zhisen Yang, “Maritime Safety Management Policy Base On Game Theory Analysis”.

Mr. Ayman Alghanmi, “The movement of liquid bulk cargo from the gulf countries to the world”.

8th November

Dr. Mohd Mustafa Al Bakri Abdullah, Manager of the Center of Excellence Geopolymer & Green Technology (CEGeoGTech), Faculty of Engineering Technology University of Malaysia Perlis (UniMaP), “Basic Geopolymer and Processing”

Abstract: This is one of the activities of the project “PrigeoC - Partnership for research in geopolymer concretes” that some LOOM members are involved in. The project is funded by the European Commission, under the Horizon 2020 Marie Curie RISE scheme.

7th December

Dr Christos Kontovas, “Speed and routing decisions in maritime transportation”

Mr. Irfan Nawaz, “The requirement for new generation surveyors in the offshore industry”