

2017 Annual Research Outcome Report of the Liverpool Logistics, Offshore and Marine (LOOM) Research Institute



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LOOM members in 2017

Dr. David R. Allanson (DRA)
Dr. Milad Armin (MA)
Dr. Musa Bashir (MB)
Dr. Eduardo Blanco-Davis (EBD)
Dr. Steve Bonsall (SB)
Dr. Chia-Hsun Chang
Dr. Robert Darlington (RD)
Prof. Stephen Fairclough (SF)
Prof. Ian Jenkinson (IJ)
Dr. Karl Jones (KJ)
Dr. Christos Kontovas (CK)
Dr. Linghai Lu (LL)
Dr. Dante Ben Matellini (DBM)
Dr. Marco Messina (MM)
Dr. Constantine Michailides (CM)
Dr. Trung Thanh Nguyen (TTN)
Dr. Dimitrios Paraskevadakis (DP)
Dr. Jun Ren (JR)
Dr. Ali Rostami (AR)
Dr. Mehdi Seddighi (MS)
Dr. Alan Wall (AW)
Prof. Jin Wang (JW)
Prof. Zaili Yang (ZY)
Dr. Lihong Zhang (LZ)
Dr. Qian Zhang (QZ)

LOOM researchers (doctoral/postdoctoral) in 2017

Prof. D. Abd Wahab	S. Loughney
A. Alghanmi	A. Makki
Y. Ancele	F.A. Najib
M. Asuguo	I. Nawaz
G. Asuelimen	H. Oraith
A. A. Atiyah	Panagiotis Papageorgiou
A. Bury	Dr. J.P. Ramanda
Dr. S.N. Chaurasia	Dr. R. Ramli
S.L. Chandler Ćrnigoj	Dr. M. Rasidi Rasani
A. Cliffe	K.S. Sang
I. Deplano	E. Shaw
Miss S.Q. Fan	S. Symes
D. Franks	A. Y. Taha
Dr. M. Garza	K. Takrouiri
Dr. I. Gheyas	Dr. M. Tu
W. Bin Abdul Halim	P. Ugedi
S. Hassan	A.Y. Usman
Dr. H.M. Hoang	M. Usman
I. C. Ikewete	V.T. Vu
A. Isola	A. Waddah
K. Ji	C. Wan
B. Kelly	L. Wang
C. Kelly	R. Wang
T.T. Le	T. Wang
Dr. C. Lersteau	Z. Yang
Dr. Y. Li	D. Yazdani

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
Prof. S. Nazir (SN), University College of Southeast Norway
Dr. A. Ng (AN), University of Manitoba, Canada
Mr. G. Phylip-Jones (GPJ)
Dr. R. Riahi (RR), Columbia Shipmanagement, Germany
Dr. F. Saeed (FS)
Prof. S. Yang (SY), De Montford University

Visiting researchers

Prof Dzuraidah Abd Wahab
Mr. T.T. Le
Dr. Rizauddin Ramli
Dr. Mohammad Rasidi Rasani
Mr. V.T. Vu
Mr. Y. Yang

Visiting professors

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

It has been identified that the emphasis in 2018 is:

1. To further develop national and international collaboration.
2. To ensure sustainable research growth.
3. To enhance on research output quality and research impact generation.
4. To enhance research infrastructure.

1. Research publications (published in 2017)

The following are the outputs published in 2017 (for details, see Appendix 1):

- 7 books/edited books.
- 7 book chapters.
- 19 SCI-cited refereed journal papers (incl. ESCI).
- 2 other academic journal papers.
- 25 refereed conference papers.
- 1 other publication.

2. Doctoral, postdoctoral and international research visiting projects (completed, on-going and started in 2017)

2.1 Research projects completed in 2017

PhD projects

1. Dr. A.Y. Usman, "Research on quantifying risk assessment of container terminal operations" (2017). (JR, *et al.*)

Visiting research projects

2. Prof. D. Abd Wahab, "Designing remanufacturable marine components and assemblies for environmental sustainability" (10-11/2017), from National University of Malaysia. (EBD, *et al.*)
3. Dr. H.M. Hoang "Operational research for rail" (3-6/2017), from FPT University, funded by the Royal Academy of Engineering. (TTN, *et al.*)
4. Mr. T.T. Le "Vessel stowage planning for ports under uncertainty" (9/2016-4/2017), from Vietnam Maritime University, funded by the British Council. (TTN, *et al.*)
5. Dr. Y. Li, "Logistics supplier selection" 2016-2017, Visiting scholar project, funded by the Chinese Government. (ZY, *et al.*)
6. Dr. M. Rasidi Rasani, "Optimization of energy harvesting eels based on vortex-induced vibration (VIV) behind a cylinder" (8-9/2017), from the National University of Malaysia. (MB, *et al.*)
7. Dr. M. Tu, "Safety analysis of 21st Century Maritime Silk Road" (2016-2017), Visiting scholar project, funded by the Chinese Government. (ZY, *et al.*)
8. Mr. V.T. Vu "Vehicle routing in urban logistics" (11/2016-2/2017), from Le Quy Don University, funded by the Royal Academy of Engineering. (TTN, *et al.*)

Postdoctoral projects

9. Dr. I. Gheyas, "Simulation for port operations" (1-11/2017), funded by the Newton Fund. (TTN, *et al.*)
10. Dr. J. Peiro Ramada, "Sustainable maritime logistics research using operational research" (2017), funded by the British Council. (TTN, *et al.*)

2.2 On-going research projects in 2017

Doctoral projects

11. W.M. Abdul Halim, "Shipping network analysis" (2013-2018), funded by Universiti Malaysia Terengganu. (ZY, *et al.*)
12. F. Ahmad Najib, "Development of decision making techniques for analysing the designation of the Northern Sea Route (NSR)" (2013-2018), funded by Universiti Malaysia Terengganu. (DBM, *et al.*)
13. A. Alghanmi, "The movement of liquid bulk cargo from the Gulf countries to the world" (2013-2018), funded by the Saudi Government. (ZY, *et al.*)
14. Y. Ancele, "Logistics routing in the physical Internet context" (2016-2019), funded by LJMU Scholarship. (BM, *et al.*)
15. G. Asuelimen, "An enhanced risk assessment model for offshore seismic survey in hostile environments: A case study of Arctic oil and gas exploration" (2016-2019), funded by the Saudi government. (EBD, *et al.*)
16. M. Asuguo, "Development of an efficient planned maintenance framework for marine and offshore machineries operating under highly uncertain environments" (2012-2018). (JW, *et al.*)
17. A.A. Atiyah, "A novel harmonised decision-making support system (HDMSS) to enhance the reliability and efficiency of port pilotage operations" (2014-2018), funded by the Saudi Government. (ZY, *et al.*)
18. A. Bury, "Short sea shipping as part of an East/West axis in European logistics" (2011-2018), funded by the EU. (AW, *et al.*)
19. S.L. Chandler Črnigoj, "Binaural sound applications for sensor technology" (2016-2019). (KJ, *et al.*)
20. A. Cliffe, "Use of drones to enhance geography education fieldtrips" (2016-2019). (KJ, *et al.*)
21. I. Deplano, "Automation technologies for logistics in the Physical Internet context" (2016-2019), funded by LJMU Scholarship. (TTN, *et al.*)
22. D. Franks, "Risk assessment of Royal Fleet Auxiliary services" (2009-2018), funded by the MoD. (JW, *et al.*)
23. I. C. Ikewete, "A risk-based framework for design, inspection and maintenance of offshore wind farm turbines" (2012-2017). (EBD, *et al.*)
24. A. Ishola, "Safety modelling approach for risk management of petroleum and gas refineries" (2014-2018). (DBM, *et al.*)
25. B. Kelly, "An analysis into the process of selection and retention of deck cadets in the UK Merchant Navy" (2016-2019). (EBD, *et al.*)
26. 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.*)
27. S. Loughney, "Offshore e-integrity case" (2014-2018), funded by LJMU-EU project WEASTFLOWS, thesis submitted in Aug. 2017. (JW, *et al.*)
28. A. Makki, "Studying the impact of LNG container tanks on LNG logistics supply chains using simulation" (2016-19). (TTN, *et al.*)
29. I. Nawaz, "Risk-based verification of offshore installations on the United Kingdom continental shelf" (2012-2018), funded by Lloyd's Register. (DBM, *et al.*)
30. H. Oraith, "The impact of human element factors on pilotage operations safety" (2016-2019), funded by the Libyan Government. (EBD, *et al.*)
31. K. Takroui, "Study of unsteady turbulence and drag reduction over patterned surfaces" (2016-2019). (MS, *et al.*)
32. P. Ugedi, "Assessing the effectiveness and implementation of the SOLAS Verified Gross Mass (VGM) Regulation" (2016-2019), funded by the Faculty and the Nigerian Maritime Administration and Safety Agency. (CK, *et al.*)
33. M. Usman, "Health management of marine engines" (2015-2019), funded by Lloyd's Register and LJMU. (ZY, *et al.*)
34. A. Waddah, "Research on evaluating logistics performance and benchmarking container business in Egypt" (2008-2018), partially-funded by the Arab Academy for Science, Technology & Maritime Logistics. (JR, *et al.*)
35. C. Wan, "Risk assessment of container supply chains" (2015-2018), funded by the Chinese government, EU and LJMU (dual PhD) (ZY, *et al.*)
36. L. Wang, "Research on risk assessment methods for healthcare supply chains in hospitals - An investigation of the feasibility of integrating risk and Lean & Agile management" (2015-2018). (JR, *et al.*)
37. Miss R. Wang, "Discrete-event simulation for the bin-packing and berth planning optimisation for ports" (2015-2018), funded by LJMU (TTN, *et al.*)
38. Miss. T. Wang, "Transport adaptation to climate change" (2015 - 2018), funded by AECOM and LJMU. (ZY, *et al.*)

39. Z. Yang, “Maritime risk assessment using gaming theory” (2015-2018), funded by LJMU and the EU. (ZY, *et al.*)
 40. D. Yazdani, “Dynamic and robust optimisation” (2016-2019), funded by LJMU Scholarship. (TTN, *et al.*)

2.3 Research projects started in 2017

Doctoral projects

41. Miss S. Fan, The influence of seafarer’s emotion on navigation safety, PhD research project (dual PhD), funded by Wuhan University of Technology and LJMU (2017-2020). (EDB, *et al.*)
 42. S. Hassan, “Pipeline quantitative risk assessment (QRA): Non-historic data-based assessment for onshore pipelines in Nigeria”, funded by the Petroleum Technology Development Fund (2017-2020). (JW, *et al.*)
 43. K. Ji, “Swarmintelligence-based decision-making for many-agent autonomous systems”, funded by LJMU and CSC (2017-2020). (QZ, *et al.*)
 44. P. Papageorgiou, "A novel framework for maritime security assessments" (2017-2020). (CK, *et al.*)
 45. E. Shaw, “Investigation and analysis into the current status and future direction relating to the application of complex computer technology for safety-critical systems in the marine sector”, funded by LJMU scholarship (2017-2020). (DBM, *et al.*)
 46. S. Symes, “Ship simulator-based seafarers’ skill acquisition incorporating the use of Functional-Infrared Spectroscopy (fNIRS)”, funded by LJMU scholarship (2017-2020). (ZY, *et al.*)

Visiting research projects

47. Dr. S. Dong, “Resilience of transport systems using traffic simulation” (8/2017-8/2018), from Wuhan University of Technology, funded by the Chinese Government. (ZY, *et al.*)
 48. Dr. Rizauddin Ramli, “Optimisation of tolerance for increasing lifetime and product performance in rotational mechanical components” (Dec 2017 – Jan 2018), from National University of Malaysia. (MB, *et al.*)

Postdoctoral projects

49. Dr. M. Garza, “Fleet sizing for vehicles in ports” (2017-18), funded by the Newton Fund. (TTN, *et al.*)
 50. Dr. C. Lersteau, “Container stacking in ports” (2017-18), funded by the Newton Fund. (TTN, *et al.*)
 51. S. Loughney, “Ship/offshore installation collision analysis” (2017-2019). (JW)

3. LOOM monthly seminars in 2017

9 LOOM monthly seminars were organised in 2017. The following external speakers delivered their presentations at LOOM’s monthly seminars:

- Prof. Adolf Ng, Professor of Transportation and Supply Chain Management at the Asper School of Business of the University of Manitoba and the Director of the University of Manitoba Transport Institute (UMTI), Canada.
- Prof. Minh Hoang Ha, VNU University of Engineering and Technology, Vietnam National University Hanoi, Vietnam
- Prof. Xinping Yan, former Vice-President of Wuhan University of Technology, and Chair Professor of Marine Engineering, Reliability, Director of the National Engineering Research Center for Water Transport Safety (WTS Center) Institute, China.
- Prof. Kay Chen Tan, IEEE Fellow, Editor-in-Chief of IEEE Transactions on Evolutionary Computation, City University of Hong Kong
- Prof. Dzuraidah Abd Wahab, Department of Mechanical and Materials Engineering, Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia (National University of Malaysia).

The 2017 LOOM monthly seminars are detailed in Appendix 2.

4. Research grants in 2017

4.1 External grants

Grants completed in 2017

• ENRICH – Integrated container supply chains (EU, 2013-1017)	€592,000	(ZY, <i>et al.</i>)
• Risk-based maintenance (LR, 2014-2017)	£5,700	(ZY, <i>et al.</i>)
• Modelling and optimising rail operations (Newton Fund, 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>)
• Co-creation of an evaluation database (IAMU, 2016-17)	\$3,343 (out of \$30,000)	(IJ & EDB)
• Computational resources (ARCHER, 2017)	£8,000	(MS)

On-going grants in 2017

• Maritime logistics research (UK BEIS, 2015-2018)	£300,000	(TTN, <i>et al.</i>)
• Route Optimisation through simulation (Red Ninja Ltd, 2015-18)	£30,000	(ZY, <i>et al.</i>)
• Climate adaptation in transportation (AECOM, 2015-2018)	£30,000	(ZY, <i>et al.</i>)
• SeaConAZ - Exploring sea containers (RC Norway, 2015-18)	£25,000 (out of £700,000)	(ZY, <i>et al.</i>)
• VP award “Functional safety (Royal Acad. of Eng., 2015-2018)	£30,000	(JW, <i>et al.</i>)
• VP award “Maritime technology” (Royal Acad. of Eng., 2016-18)	£30,000	(JW, <i>et al.</i>)
• Research In geopolymer concretes (EU H2020, 2016-2020)	€180,000 (out of €516k)	(JW, <i>et al.</i>)

Grants started in 2017

• Newton research collaborations programme (RAEng, 2016-17)	£24,000	(TTN, <i>et al.</i>)
• H2020 RESET – Rel. and Safety Eng. and Tech. (2017-2021)	€1,471,500	(JW, <i>et al.</i>)
• UK HSE - Offshore collision risk management (2017-2018)	£15,438	(JW, <i>et al.</i>)
• PTDF - Onshore pipeline safety assessment (2017-2020)	£15,000	(JW, <i>et al.</i>)
• EU Interreg - ARCWIND - Floating wind energy (2017-2020)	€400,437 (out of €4m)	(JW, <i>et al.</i>)
• Dept. for Transport - Cycling safety management (2017-2018)	£16,400	(ZY, <i>et al.</i>)
• ESF - Maritime Superskills (2017-2018)	£460,000	(IJ & EDB)

- CSC - Seismic behaviour of offshore wind turbines (2017-2018) £1,000 (MB, *et al*)
- EU ERDF Interreg - Atlantic Blue Port Services (2017-2019) €185,400 (CK, *et al.*)
- CSC - Green innovation in heavily polluted industries (2017-18) £1,000 (LZ)

Grants awarded in 2017

- UK EPSRC - PVC: Prioritising Vehicle Cleanliness (2018-2019) £50,000 (ZY)
- EU H2020 - GOLF – Food supply chains (2018-2021) €126,000 (out of €1m) (ZY, *et al.*)
- CSC - Supply chain research (2017-20) £32,000 (QZ, *et al.*)
- UK EPSRC - Rotorcraft simulation fidelity (2018-2021) £365,697 (LL)

5. Evidence of national and international peer esteem in 2017

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

- Fairclough S., “Varieties of interaction: from user experience to neuroergonomics”, keynote presentation at Human Factors and Ergonomics Society (European Chapter), October, 2017, Rome, Italy. (SF)
- Wang J., “How can a risk-based approach be effectively used in design and operation of large marine transportation systems under uncertainties”, keynote address, the 4th International Conference on Transportation Information and Safety and 9th Annual International Conference on Urban Traffic Safety, August 8 – 10, 2017, Banff, Alberta, Canada. (JW)
- Wang J., “Application of evidential reasoning in risk-based design and operation of large engineering systems”, keynote address, the 2nd International Workshop on Maritime Safety and Smart Shipping (MSSS), September 25-26, 2017, Wuhan, China. (JW)
- Wang J., “Evidential reasoning rule and its application to safety and reliability assessment”, Plenary address, 2017 2nd International Conference on System Reliability and Safety, December 20-22, 2017, Milan, Italy. (JW)
- Yang Z., “Development of risk studies in maritime supply chains – Towards resilient and sustainable transport”, Keynote address in International Conference on Integrated Container Supply Chain, November 4-8, 2017, Ningbo, China. (ZY)

b. Other invited presentations

- Lu, L., and Jump, M., “Pilot modelling For boundary hazard perception and reaction study,” 43rd European Rotorcraft Forum, Politecnico di Milano, Bovisa, Milano, Italy, September 12 - 15, 2017, Paper No 533. (LL)
- Ren J., “Current research on risk assessment methods under high uncertainty: using the utility theory and Swiss Cheese model”, Invited presentation in the research seminar of the Southwest China Petroleum University, Chengdu, China, September 10, 2017. (JR)
- Ren J., “Building resilience for emergency resources supply chain of natural disasters”, Invited presentation in the research seminar of Zhejiang Sci-Tech University, Hangzhou, China, February 23, 2017. (JR)
- Wang J. (with Bin Ahmad Najib A.F., Matellini B.), “Analysing the Designation of the Northern Sea Route (NSR)”, May 16, 2017, Hong Kong Polytechnic University. (JW)
- Wang J., “Data uncertainty modelling in maritime transport”, Faculty of Engineering, Mahidol University, Thailand, July 20, 2017. (JW)
- Wang J., “Formal Safety Assessment as a tool for safety management and for rule making purposes”, presented at China’s formal safety assessment experts group meeting, September 27, 2017, Wuhan University of Technology. (JW)
- Wang J., “Maritime risk assessment and application of fault tree analysis”, in Student Seminar on Maritime Safety and Smart Shipping (MSSS) 2017, Chutian International Hotel Wuhan, September 24, 2017. (JW)

c. Participation in journal editorial boards (SCI cited journals)

- Member of the Review Board of Journal of Shipping and Ocean Engineering. (EBD)
- Member of the Review Board of International Journal of Agile Systems and Management. (JR)
- Member of the Review Board of International Journal of Ocean Systems Engineering (2013-date). (JR)
- Member of the Editorial Board of Maritime Policy and Management. (JW)
- Deputy Editor of Journal of Marine Science and Technology. (JW)
- Co-Editor of Frontiers in Human Neuroscience research theme “Detection and Estimation of Working Memory States and Cognitive Functions Based on Neurophysiological Measures”. (SF)
- Member of the Editorial Board for IEEE Transactions on Affective Computing. (SF)
- Editor of Springer’s Lecture Notes in Computer Science book Vol. 10199. (TTN)
- Editor of Springer’s Lecture Notes in Computer Science book Vol. 10200. (TTN)
- Lead Guest Editor of a Special Issue in Mathematical Problems in Engineering. (ZQ)
- Member of Editorial Board of European Journal of International Management. (ZY)
- Member of Editorial Board of Journal of Marine Science and Engineering. (ZY)
- Member of Editorial Board of Journal of Transportation Research Part E: Logistics and Transportation Review. (ZY)
- Member of Editorial Board of Shocks and Vibrations. (ZY)
- Associate Editor of IMA Journal of Management Mathematics. (ZY)
- Member of Editorial Board of Asian Journal of Shipping and Logistics. (ZY)
- Guest Editor of Advances in Human-Computer Interaction. (ZY)
- Guest Editor of International Journal of Shipping and Transport Logistics. (ZY)
- Guest Editor of Transportation Research Part E: Logistics and Transport Review. (ZY)
- Guest Editor of Transportation Research Part D: Transport and Environment. (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)
- Member of the UK EPSRC peer review college of experts. (CM, JW, ZY)
- Advisor on the Ports and Terminals Advisory Group for UK Trade & Investment (UKTI). (IJ)
- Member of the IMO Formal Safety Assessment Experts Group. (JW)
- The external expert reviewer for EU-funded project LEANWIN. (JW)
- Expert panel member for EU BG-04-2017. (JW)
- Editorial Advisor, Cambridge Publishing Group. (TTN)
- Advisor of the UK Government for Science on “Future of the Sea” programme. (ZY)

- Evaluator/overseas expert of the Romanian National Council for Scientific Research. (ZY)

e. Learned society involvement

- Committee member of the North West Branch of the IMarEST. (GPJ & EBD)
- 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. (JW)
- President of Psychophysiology in Ergonomics (an international working group of the International Ergonomics Association). (SF)
- Founding director of International Association of Transport, Trade and Service Studies (IATTSS). (ZY)
- Member of International Association of Maritime Economics (IAME). (ZY)

f. External PhD examinership

- 1 PhD examination at the University of Strathclyde. (CK)
- 1 PhD examination at the University of Strathclyde. (DBM)
- 1 PhD examination at Norwegian University of Science and Technology. (JW)
- 1 PhD examination at Aalto University. (JW)
- 1 PhD examination at the University of Nottingham (Computer Science) (SF)
- 1 PhD examination at the University of Plymouth. (ZY)
- 1 PhD examination at Hong Kong Polytechnic University. (ZY)

g. Involvement of conference organisation

- Co-Chair of the Academic Committee of the 4th International Conference on Transportation Information and Safety, August 8 – 10, Banff, Alberta, Canada, 2017. (JW)
- Co-Chair of the 2nd International Workshop on Maritime Safety and Smart Shipping (MSSS), September 25-26, Wuhan, China. (JW)
- Co-Organiser of the first biannual Neuroadaptive Technology Conference, July 2017, Berlin. (SF)
- Co-Organiser of the 20th European Conference on the Applications of Evolutionary Computation, April 2017. (TTN)
- Chairman of the 14th conference track “Evolutionary Algorithms in Stochastic and Dynamic Environments (EvoSTOC)” as a part of the international EvoStar 2017 conference. (TTN)
- Publication chair, 21st Asia Pacific Symposium on Intelligent and Evolutionary Systems. (TTN)
- Special Session Co-Chair, The 11th International Conference on Simulated Evolution and Learning SEAL 2017. (TTN)
- Co-Chair of the organisation committee of International Conference of Integrated Container Supply Chains, November 4-8, 2017, Ningbo, China. (ZY)

h. Prizes/honours

- Maritime Policy & Management Best Paper Award, paper title: ‘Use of Bayesian network for risk based port state control’, awarded in International Association of Maritime Economics 2017 Conference, June 28-30, Kyoto, Japan, 2017. (ZY, Yang Z.S. and Yin J.B.)
- LISS Conference Best Paper Award, paper title: ‘A fuzzy rule-based Bayesian reasoning approach for risk assessment of petroleum transportation systems’, awarded in 7th IEEE International Conference on Logistics, Informatics and Service Sciences 2017 Conference, Kyoto, Japan, with satellite session in Beijing China, July 24-27, 2017. (ZY, Alghanmi A. and EBD.)
- Highly Commended award and Runner Up, Newton Prize 2017. (TTN, *et al.*)
- Best reviewing score, 21st Asia Pacific Symposium on Intelligent and Evolutionary Systems, 2017. (TTN)
- Best reviewing score, EvoSTOC conference track, 20th European Conference on the Applications of Evolutionary Computation. (Yazdani, *et al.*)

i. Consultancy

- Currently advising Transport for the North (TFN) through the 6019MAR Transport Policies and Practices module produced report titled as “How new thinking in the North West could be a catalyst for the development of a Pan-Northern Multimodal Freight Connectivity”. (DP)
- AO.com. (SF)
- Peel Ports, VGP (Vietnam), Greenport (Vietnam), Vauxhall, and InnovSolutions. (TTN)
- AECOM, Transport Systems Catapult, TfGM, Mersey Travel, TfN. (ZY)

j. Others

- Working in partnership with Risktec Solutions delivering distance learning and face-to-face modules. (DBM)
- Port optimisation for Greenport and VGP ports, Vietnam; Optimal routing in hospitals with InnovSolutions, UK; Simulation and Optimisation for Manufacturing logistics with Vauxhall. (TTN)
- Chosen as an example of UK research on the theme "Sea and Trade routes" in the German Ministry of Education and Research's Science Year: 2016-2017. (TTN)
- Chosen as one of only eight global success stories for the Newton Fund by the British Council. This is the only chosen success story to represent British Council-managed collaborations between UK-Vietnam. (TTN)
- Highlighted on the official social media site of the British Embassy in Vietnam as a successful example of collaboration between research organisations, government, NGOs and industries. (TTN)
- Research was broadcast by Vietnam's state television news and regional newspapers. (TTN)
- Demonstrated significant reduction in cost on real-world scenarios of port partners. (TTN)

Appendix 1: Publications published in 2017

Books

1. de Waard D., Toffetti A., Wiczorek R., Sonderegger A., Röttger S., Bouchner P., Franke T., Fairclough S.H., Noordzij M., Brookhuis K. (Eds.) (2017), Proceedings of the Human Factors and Ergonomics Society Europe Chapter 2016 Annual Conference. ISSN 2333-4959 (online), available from <http://hfes-europe.org>.
2. Graumann K., Fairclough S.H., Zander T., Ayaz H. (Eds.) (2017), Trends In neuroergonomics: A comprehensive overview, Frontiers S.A., ISBN 9782889452033, Ebook available.
3. Kirchner E.A., Fairclough S.H., Kirchner F. (2017), Embedded multimodal interfaces in robotics: Applications, future trends and societal implications, In Oviatt, S., Schuller, B., Cohen, P. & Sonntag, D. (eds.) Handbook of Multimodal-Multisensor Interfaces, Vol.3, ACM Books, Morgan Claypool.
4. Lee P.T.W., Yang Z. (Eds.) (2017), Multiple criteria decision making in maritime studies and logistics – Applications and cases, International Series in Operations Research & Management Science, Springer, USA.
5. Messina M., Njuguna J. (2017), Design and optimization of a mems-based piezoresistive accelerometer, LAP Lambert Academic Publishing, ISBN: 978-620-2-08179-5.
6. Squillero G, ..., Nguyen TT, *et al.* (Eds.) (2017), Applications of evolutionary computation, 20th European Conference, EvoApplications 2017, Part I, LNCS vol. 10199, Springer.
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Appendix 2: LOOM monthly seminars in 2017

Time: 10.00-11.15, first Wednesday of each month from February 2017.

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 2017, LOOM has delivered 9 research seminars with 5 external researchers providing invited presentations.

First Quarter – Chairing person: Prof. Z. Yang

3rd Feb., Upper Lecture Theatre, Peter Jost Enterprise Centre”

Prof. Adolf Ng (external speaker), Professor of Transportation and Supply Chain Management at the Asper School of Business of the University of Manitoba and the Director of the University of Manitoba Transport Institute (UMTI), (Canada).

Presentation title: “Adaptation of Marine Facilities to the Impacts posed by Climate Change”

Abstract: The study investigates the adaptation of climate change impacts by marine facilities, notably ports, examining how institutional structure constrains and facilitates climate adaptation management and how an unprecedented challenge, such as climate change, can affect institutional development. A theoretical framework is developed by matching three main streams of institutionalism (sociological, rational choice and historical) against the major features during the climate adaptation management process. The study found that that the institutional structure and designation of responsibility for climate change adaptation remain in a state of high institutional plasticity where marine stakeholders attempt to preserve self-interests without (first) committing resources. It shows how unprecedented challenges, like climate change, can erode the effectiveness of established institutional systems and seriously constrain commitments from marine stakeholders through exaggerating uncertain causes and effects, as well as the lack of clear monitoring responsibilities.

Second Quarter – Chairing person: Dr. E. Blanco/Dr. A. Wall/ Dr. J. Ren

5th April

Minh Hoang Ha (external speaker), VNU University of Engineering and Technology, Vietnam National University Hanoi, Vietnam

Presentation title: “The route-first cluster-second heuristics: the state-of-the-art methods for vehicle routing problems”
Ran Wang, “Berth planning problem”

12th April

Prof. Xinping Yan (external speaker), Former Vice President of Wuhan University of Technology, and Chair Professor of Marine Engineering, Reliability, Director of National Engineering Research Center for Water Transport Safety (WTS Center) Institute, China.

Presentation title: “Strategies on improving maritime transportation safety of the Yangtze River”

Abstract: With the fast development of the shipping industry, safety has been one of the top concerns for ships navigating in the Yangtze River. A lot of efforts have been done by researchers and maritime safety managers from technological or management perspectives. In this paper, the strategies on improving the maritime transportation safety of the Yangtze River are discussed and summarized. The navigation safety can be improved by using advanced technologies, applying the latest risk assessment theories and methodologies, or utilizing better safety management. Therefore, the strategies are composed of the four aspects, which are: the more comprehensive data collection on ships and navigational environment; risk assessment and control based on statistics of the safety related data and on expert knowledge; modelling and simulations on emergency decision support; and maritime safety management systems. The work of the paper is meaningful for researchers and managers to get a full picture of the latest development in safety management and to make further efforts on enhancing navigation safety of the Yangtze River.

3rd May

Ahmed Makki
Cameron Kelly

“Small scale LNG intermodal logistics”

“Investigation into the uses of Life Cycle Analysis as an Alternative Method of Selecting Tidal Power Schemes”

7th June

Tri Thanh Le
Ademola Ishola

“Automated Stowage Planning For Container Ships”

“Safety Modelling Approach for risk management of petroleum and gas refineries”

Third Quarter – Chairing person: **Prof. Z. Yang**/Dr. T.T. Nguyen/Dr. C. Michailedis

5th July

Dr. Iffat Gheyas

“Simulation of operations in Vietnamese VIP Greenport”

Dr. Charly Lersteau

“Optimising the container stacking process in an Asian port”

7th August, James Parsons Upper Lecture Theatre

Prof. Kay Chen Tan (*external speaker*), IEEE Fellow, Editor in Chief of IEEE Transactions on Evolutionary Computation, City University of Hong Kong

Presentation title: “Evolutionary Computation at Work: Opportunities and Challenges”

Abstract: Evolutionary Computing (EC), which is based on the principles of natural selection and genetic inheritance, is often considered a global optimization methodology with a metaheuristic or stochastic optimization character. It is distinguished by the use of a population of candidate solutions rather than traditional approach of iterating over a single point in the search space. EC is being increasingly applied to many problems, ranging from practical applications in industry to cutting-edge scientific research. The plenary will provide a brief overview of this exciting research field including opportunities and challenges faced in applying EC to a variety of real-world multi-objective problems, such as design automation, robust optimization and logistic application. In particular, a case study involving the estimation of remaining useful life (RUL) for turbofan engines in the area of robust prognostic will be studied. As one of the key enablers of condition-based maintenance, prognostic involves the core task of determining the RUL of the system. The plenary will also present an application of evolutionary deep learning ensembles to improve the prediction accuracy of RUL estimation for turbofan engines.

6th September

Zhisen Yang

“Bayesian network of risk factors in PSC”

Sean Loughney

“Offshore e-integrity case”

Fourth Quarter – Chairing person: **Dr. D.B. Matellini**/Dr. C. Kontovas

1st November

Igor Deplano

“A walk-through 3D Bin Packing”

Yannis Ancele

“Vehicle Routing Problem for the Physical Internet”

Prof. Dzuraidah Abd Wahab (*external speaker*), Department of Mechanical and Materials Engineering, Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia (National University of Malaysia)

Presentation title:

“Remanufacturing in the Marine Industry : The way forward for the Circular Economy”

6th December

Lei Wang

“Research on risk management methods for healthcare supply chain in hospital - An investigation of the efficiency of complemented risk mitigation strategy in healthcare supply chains”

Atiyah Atiyah

“The influences of the current organisational practices on the marine pilotage operations: a field trip outcome.”