

2018 Annual Research Outcome Report of the Liverpool Logistics, Offshore and Marine (LOOM) Research Institute



Contact details

Professor Jin Wang
Professor of Marine Technology
Director of LOOM Research Institute
Faculty of Engineering and Technology
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
Faculty of Engineering and Technology
Liverpool John Moores University
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
Faculty of Engineering and Technology
Liverpool John Moores University
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 2018

Dr. Ariyan Ashkanfar (AA)
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 (CHC)
Dr. Robert Darlington (RD)
Prof. Stephen Fairclough (SF)
Dr. Fang Bin Guo (FBG)
Prof. Ian Jenkinson (IJ)
Dr. Karl Jones (KJ)
Dr. Christos Kontovas (CK)
Dr. Linghai Lu (LL)
Dr. Dante Ben Matellini (DBM)
Dr. Sean Makleson (SM)
Dr. Marco Messina (MM)
Dr. Trung Thanh Nguyen (TTN)
Dr. Robyn Pyne (RP)
Dr. Dimitrios Paraskevadakis (DP)
Dr. Jun Ren (JR)
Dr. Mehdi Seddighi (MS)
Dr. Alan Wall (AW)
Prof. Jin Wang (JW)
Prof. Zaili Yang (ZY)
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)
Prof. Y. Jin (YJ), Surrey University
Ms B. Kelly (BK)
Professor Roland Larek, University of Applied Sciences, Germany
Prof. K. X. Li (KXL), Chung Ang Univ.
Dr. S. Miri Lavasani (SML)
Dr. Constantine Michailides (CM), Cyprus University of Technology
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. Z. Qu (ZQ)
Dr. R. Riahi (RR), Columbia Shipmanagement, Germany
Dr. F. Saeed (FS)
Prof. S. Yang (SY), De Montford University

LOOM researchers (doctoral/postdoctoral) in 2018

Dr. D. Agarwal
A. Alghanmi
Y. Ancele
M. Asuguo
G. Asuelimen
A. A. Atiyah
A. Bury
S.L. Chandler Črnigoj
A. Cliffe
I. Deplano
J. Ender
Miss S.Q. Fan
D. Franks
Dr. M. Garza
W. Bin Abdul Halim
S. Hassan
I. C. Ikewete
A. Isola
B. Kelly
C. Kelly
K. Ji
S. Jones
Dr. C. Lersteau
Dr. Y. Li
Dr. S. Loughney
A. Makki
F.A. Najib
I. Nawaz
H. Oraith
Panagiotis Papageorgiou
E. Shaw
O. Salih
S. Symes
N. Szilard
A. Y. Taha
K. Takroui
P. Ugedi
M. Usman
A. Waddah
C. Wan
L. Wang
R. Wang
T. Wang
Y. Yang
Z. Yang
D. Yazdani

Visiting researchers

Dr. Shahrum Abdullah
Prof. Ahmad Kamal Ariffin
Dr. S. Dong
H. Li
Orawan Mokkhasas
Dr. Y. Wang
Dr. Wonsiri Punurai
Dr. Rizauddin Ramli
Dr. Özkan Uğurlu
Yang
Mr. Serdar Yıldız
Dr. D. Zhang

Visiting professors

RAEng Professor Ron Bell, ESC Ltd, UK
RAEng Professor D. Cooper, Risktec
RAEng Professor Paul Davies, LR
Professor Paul Lee, Zejiang University, China
Professor Kevin Cullinane, Gothenburg University, Sweden

It has been identified that the LOOM's research emphasis in 2019 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 2018)

The following are the outputs published in 2018 (for details, see Appendix 1):

- 2 books/edited books.
- 1 book chapter.
- 35 SCI-cited refereed journal papers (incl. ESCI).
- 17 refereed conference papers.
- 5 other publications.

2. Doctoral, postdoctoral and international research visiting projects (completed, on-going and started in 2018)

2.1 Research projects completed in 2018

PhD projects

1. Dr. A. Alghanmi, "Risk assessment of maritime petroleum supply chains" (2018). (ZY, *et al.*)
2. Dr. M. Asuquo, "Development of an efficient planned maintenance framework for marine and offshore machineries operating under highly uncertain environments" (2018). (JW, *et al.*)
3. Dr. A. Atiyah, "A novel harmonised decision-making support system (HDMSS) to enhance the reliability and efficiency of port pilotage operations" (2018). (ZY, *et al.*)
4. Dr. A. Ishola, "Safety modelling approach for risk management of petroleum and gas refineries" (2018). (DBM, *et al.*)
5. Dr. D. Franks, "Risk assessment of Royal Fleet Auxiliary services" (2018), funded by the MoD. (JW, *et al.*)
6. Dr. S. Loughney, "Offshore e-integrity case" (2014-2018), funded by LJMUEU project WEASTFLOWS. (JW, *et al.*)
7. Dr. A.M.Y Taha, "Investigating an interactive technological self-study conceptual framework for on-board maritime education and training" (2018), funded by Arab Academy for Science, Technology & Maritime Transport. (AW, *et al.*)
8. Dr. C. Wan, "Risk assessment of maritime container supply chains" (2018). (ZY, *et al.*)
9. Dr. 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" (2018). (JR, *et al.*)
10. Dr. R. Wang, "Discrete-event simulation for the bin-packing and berth planning optimisation for ports" (2018), funded by LJMUEU (TTN, *et al.*)
11. Dr. Z. Yang, "Port State Control using advanced risk analysis approach" (2018). (ZY, *et al.*)
12. Dr. D. Yazdani, "Dynamic and robust optimisation" (2019), funded by LJMUEU Scholarship. (TTN, *et al.*)

Postdoctoral project

13. Dr. M. Garza, "Fleet sizing for vehicles in ports" (2017-18), funded by the Newton Fund. (TTN, *et al.*)
14. Dr. C. Lersteau, "Container stacking in ports" (2017-18), funded by the Newton Fund. (TTN, *et al.*)

Visiting research projects

15. Dr. S. Abdullah, "Vehicle component monitoring using time-frequency localisation of strain loadings" (7-9/2018), from Universiti Kebangsaan Malaysia and funded by EU. (Stancioiu, *et al.*)
16. Prof. Ron Bell, "Functional safety" (2015-2018), funded by the Royal Academy of Engineering via its Visiting Professorship Scheme.
17. 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.*)
18. Prof. Ahmad Kamal Ariffin Mohd Ihsan, "Vehicle computational mechanics" (10-11/2018), from Universiti Kebangsaan Malaysia and funded by EU. (Li, AA & Rothwell).
19. Orawan Mookhavas, "Port logistics system: sustainable assessment of automated container ports" (5-10/2018), from Mahidol University, Thailand and funded by EU. (EBD, *et al.*)
20. Dr. Wonsiri Punurai, "Structural assessment and health monitoring of marine structures" (6-7 & 10/2018), from Mahidol University, Thailand and funded by EU. (JW, *et al.*)
21. Dr. Rizauddin Ramli, "Optimal intelligent manufacturing systems" (12/2017-1/2018), from Universiti Kebangsaan Malaysia and funded by EU. (MB, *et al.*)
22. Dr. Özkan Uğurlu, "Lessons learned from the last twenty years of passenger ship accidents and accident-free future" (10/2017-8/2018), Karadeniz Technical University and funded by the Scientific and Technological Research Council of Turkey (TUBITAK). (JW, *et al.*)
23. Y. Yang, "Structural modelling of offshore wind turbines" (2017-2018), funded by the China Scholarship Council. (MB, *et al.*)
24. Mr. Serdar Yıldız, "Analysis of ship grounding accidents using HFACS and Bayesian Network" (4-7/2018), Karadeniz Technical University and funded by the Scientific and Technological Research Council of Turkey (TUBITAK).
25. Dr. D. Zhang "Safety of stowage of general ships" (01/2018-01/2019), from Dalian Maritime University, funded by China Scholarship Council. (ZY, *et al.*)
26. Mr. V.T. Vu "Co-evolution techniques in multi-objective optimization" (7/2018-10/2018), from Le Quy Don University, funded by the Newton Fund and NAFOSTED. (TTN, *et al.*)

2.2 On-going research projects in 2018

Doctoral projects

27. 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.*)
28. Y. Ancele, "Logistics routing in the physical Internet context" (2016-2019), funded by LJMUEU Scholarship. (DBM, *et al.*)
29. 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.*)
30. W.M. Bin Abdul Halim, "Shipping network analysis" (2013-2018), funded by Universiti Malaysia Terengganu. (ZY, *et al.*)
31. A. Bury, "Short sea shipping as part of an East/West axis in European logistics" (2011-2018), funded by the EU. (AW, *et al.*)
32. S.L. Chandler Črnigoj, "Binaural sound applications for sensor technology" (2016-2019). (KJ, *et al.*)
33. A. Cliffe, "Use of drones to enhance geography education fieldtrips" (2016-2019). (KJ, *et al.*)
34. I. Deplano, "Automation technologies for logistics in the Physical Internet context" (2016-2019), funded by LJMUEU Scholarship. (TTN, *et al.*)
35. J. Ender, "A research into interaction among humans, machines and networks across the digitised industry at present and in the future" (2017-2020), funded by HS Wismar - University of Applied Sciences, Germany. (FBG, *et al.*)
36. Miss S. Fan, "The influence of seafarer's emotion on navigation safety" (2017-2020), dual PhD, funded by Wuhan University of Technology and LJMUEU. (EDB, *et al.*)
37. 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.*)

38. I. C. Ikewete, "A risk-based framework for design, inspection and maintenance of offshore wind farm turbines" (2012-2017). (EBD, *et al.*)
39. K. Ji, "Swarmintelligence-based decision-making for many-agent autonomous systems", funded by LJMU and CSC (2017-2020). (QZ, *et al.*)
40. B. Kelly, "An analysis into the process of selection and retention of deck cadets in the UK Merchant Navy" (2016-2021). (EBD, *et al.*)
41. 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.*)
42. A. Makki, "Studying the impact of LNG container tanks on LNG logistics supply chains using simulation" (2016-19). (TTN, *et al.*)
43. I. Nawaz, "Risk-based verification of offshore installations on the United Kingdom continental shelf" (2012-2018), funded by Lloyd's Register. (DBM, *et al.*)
44. H. Oraith, "The impact of human element factors on pilotage operations safety" (2016-2019), funded by the Libyan Government. (EBD, *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" (2017-2020), funded by LJMU scholarship. (DBM, *et al.*)
46. K. Takroui, "Study of unsteady turbulence and drag reduction over patterned surfaces" (2016-2019). (MS, *et al.*)
47. 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.*)
48. P. Papageorgiou, "A novel framework for maritime security assessments" (2017-2020). (CK, *et al.*)
49. M. Usman, "Health management of marine engines" (2015-2019), funded by Lloyd's Register and LJMU. (ZY, *et al.*)
50. A. Waddah, "Research on evaluating logistics performance and benchmarking container business in Egypt" (2008-2019), partially-funded by the Arab Academy for Science, Technology & Maritime Logistics. (JR, *et al.*)
51. Miss T. Wang, "Transport adaptation to climate change" (2015 – 2018), funded by AECOM and LJMU. (ZQ, *et al.*)
52. S. Symes, "Ship simulator-based seafarers' skill acquisition incorporating the use of Functional-Infrared Spectroscopy (fNIRS)" (2017-2020), funded by LJMU scholarship. (ZY, *et al.*)

Postdoctoral projects

53. Dr. S. Loughney, "Ship/offshore installation collision analysis" (2017-2019). (JW)
54. Dr. C. Lersteau, "Anticipating and mitigating reactionary delays in rail" (2018-19), funded by the Rail Safety and Standard Boards. (TTN, *et al.*)
55. I. Deplano, "Anticipating and mitigating reactionary delays in rail" (2018-19), funded by the Rail Safety and Standard Boards. (TTN, *et al.*)

Visiting research projects

56. Dr. Paul Davies, "Risk assessment and marine technology" (2016-2019), funded by the Royal Academy of Engineering via its Visiting Professorship Scheme.

2.3 Research projects started in 2018

Doctoral projects

57. N. Szilard, "Formation planning and control of swarm autonomous robotic systems", funded by LJMU Scholarship (2018-2021). (QZ, *et al.*)
58. S. Jones. "Reciprocity and Mutuality: A Study into the Emergence of a New Maritime Economy in the Liverpool City Region. (IJ, *et al.*)
59. O. Salih, "Investigation of an intelligent shunt for Hydrocephalus monitoring" (2018-2021). (MM, *et al.*)

Visiting research projects

60. H. Li "Clustering of shipping routing for risk analysis" (05/2018-05/2019), from Wuhan University of Technology, funded by China Scholarship Council (ZY *et al.*)
61. Dr. D. Cooper, "Safety and Engineering Risk Management" (2018-2021), Visiting Professor from Risktec and funded by the Royal Academy of Engineering. (DBM)
62. Dr. Y. Wang, "Emergency Decision Support System for Offshore Safety", from China University of Petroleum and funded by the China Scholarship Council (2018-2019). (JW).

Postdoctoral projects

63. Dr. D. Agarwal, "Rotorcraft simulation fidelity", funded by EPSRC. (LL)
64. Dr. C. Lersteau, "Anticipating and mitigating reactionary delays in rail" (2018-19), funded by the Rail Safety and Standard Boards. (TTN, *et al.*)
65. I. Deplano, "Anticipating and mitigating reactionary delays in rail" (2018-19), funded by the Rail Safety and Standard Boards. (TTN, *et al.*)
66. Y. Yang, "Integrity modelling of floating offshore wind installations" (2018-2020), funded by EU. (MB, *et al.*)

3. LOOM monthly seminars in 2018

13 LOOM monthly seminars were organised in 2018. The following external speakers delivered their presentations at LOOM's monthly seminars:

- Prof. Paul Tae-Woo Lee (external speaker), Professor of Maritime Transport and Logistics and Director of Institute of Maritime Logistics at Ocean College, Zhejiang University, China.
- Dr. Wonsiri Punurai (external speaker), Mahidol University, Thailand.
- Dr. Ozkan Ugurlu, Mr Serdar Yildiz (external speaker), Karadeniz Technical University, Turkey.
- Prof. Lirong Cui (external speaker), School of Management & Economics at Beijing Institute of Technology, China.

- Professor Jasmine Lam Siu Lee (external speaker), Nanyang Technological University, Singapore.

The 2018 LOOM monthly seminars are detailed in Appendix 2.

4. Research grants in 2018

4.1 External grants

Grants completed in 2018

• ST4W funded by EU, Smart Tracking Data Network (2018)	£4,000	(DP)
• UK HSE - Offshore collision risk management (2017-2018)	£15,438	(JW, <i>et al.</i>)
• Royal Acad. of Eng. - VP in Functional safety (2015-2018)	£30,000	(JW, <i>et al.</i>)
• CSC - Green innovation in heavily polluted industries (2017-18)	£1,000	(LZ)
• CSC - Seismic behaviour of offshore wind turbines (2017-2018)	£1,000	(MB, <i>et al.</i>)
• ARCHER, Computational resources (2018)	£8,000	(MS)
• Newton Fund, Modelling and optimising rail operations (2017-18)	£18,000	(TTN, <i>et al.</i>)
• UK BEIS, Maritime logistics research (2015-2018)	£300,000	(TTN, <i>et al.</i>)
• Red Ninja Ltd, Route Optimisation through simulation (2015-18)	£30,000	(ZY, <i>et al.</i>)
• AECOM, Climate adaptation in transportation (2015-2018)	£30,000	(ZY <i>et al.</i>)
• Dept. for Transport, Cycling safety management (2017-2018)	£16,400	(ZY, <i>et al.</i>)

On-going grants in 2018

• ESF - Maritime Superskills (2017-2019)	£460,000	(IJ, <i>et al.</i>)
• Royal Acad. of Eng. - VP in Maritime technology (2016-18)	£30,000	(JW, <i>et al.</i>)
• Research In geopolymers concretes (EU H2020, 2016-2020)	€180,000 (out of €516k)	(JW, <i>et al.</i>)
• H2020 RESEt – Rel. and Safety Eng. and Tech. (2017-2021)	€1,471,500	(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>)
• SeaConAZ - Exploring sea containers (RC Norway, 2015-19)	£30,000 (out of £700,000)	(ZY, <i>et al.</i>)

Grants started in 2018

• EU ERDF Interreg - Atlantic Blue Port Services (2017-2019)	€185,400	(CK, <i>et al.</i>)
• RAEng., VP in Risk Management (2018-2021)	£30,000	(DBM, <i>et al.</i>)
• AHRC-Newton fund: Urban revitalisation (2018 – 2021)	£249,290	(FBG, <i>et al.</i>)
• Resilience of offshore wind energy platforms, Royal Soc.	£12,000	(JW, <i>et al.</i>)
• EU EDRF - Adaptation of floating wind turbines (2008-2021)	€400,437 (out of €3.9m)	(JW, <i>et al.</i>)
• UK EPSRC - Rotorcraft simulation fidelity (2018-2021)	£365,697	(LL)
• RSSB – Anticipating/mitigating rail delays (2018-19)	£86,000	(TTN, <i>et al.</i>)
• EU ERDF – LCR Green Sustainable Corridors (2018-2021)	£673,000 (out of £8.35m)	(TTN, <i>et al.</i>)
• EU H2020 – Food Supply Chains (2018-2022)	€189,000	(ZY, <i>et al.</i>)
• UK EPSRC – Vehicle Cleanliness (2018-2021)	£50,000	(ZY)
• UK DfT – Cycling risk prediction (2018-2020)	£55,000	(ZY, <i>et al.</i>)

Grants awarded in 2018

• IAMU - Cybersecurity in the maritime industry (2019-2020),	\$20,000	(CHC)
• CILT - Risk evaluation of autonomous surface ships (2019-2020),	£7,500	(CHC)
• CSC - Supply chain research (2017-20)	£32,000	(QZ, <i>et al.</i>)
• EU H2020 – Human reliability and training (2019-2022)	€173,000 (out of €1m)	(ZY, <i>et al.</i>)
• EU Interreg - Innovative knowledge transfer for blue economy	€480,000 (out of €2.43m)	(ZY, <i>et al.</i>)
• EU, RoCS - Rotorcraft Certification by Simulation (2019-2022)	€140,000 (out of €3m)	(LL)
• EU Erasmus+, SKILSEA: Futureproof Skills (2019-2023)	€148,860 (out of €4m)	(RP, <i>et al.</i>)
• EU H2020, REMESH – Emergency Resources Chain (2019-2022)	€1,300,000	(JR, <i>et al.</i>)
• RSSB – ANTI-SLIP – forecasting adhesion (2019-2020)	£99,000	(TTN, <i>et al.</i>)
• InnovateUK & DfT – Customer information system (2019-2020)	£265,000	(TTN, <i>et al.</i>)

5. Evidence of national and international peer esteem in 2018

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

- Wang J., “Safety and reliability management of large engineering systems”, Opening keynote address, 2018 10th International Conference on Information Management and Engineering (ICIME 2018) and 2018 International Conference on Information Hiding and Image Processing (IHIP 2018), September 22-24, 2018, Manchester, UK.

b. Other invited presentations

- Blanco-Davis E., “Perspective of clean fuels on maritime technologies for the reduction of GHG emission in the maritime industry”, Invited expert speaker at the workshop funded by the Panamanian Maritime Authority and the British Embassy in Panama, Panama City, Panama, 12-14 November 2018.
- Blanco-Davis E., “Presenting process flowsheet development, condition monitoring”, Invited lecturer to University of South-Eastern Norway (USN), Vestfold, Norway, July 9th to 11th, 2018.
- Chang, C.H., “The development of autonomous ship operations”, 14 Dec 2018, National Kaohsiung University of Science and Technology, Taiwan. (CHC)
- Gündoğan O., Çiçek K., Paraskevadis D., “A new perspective on executive MBA program in maritime logistics”, 25th International Maritime Lecturers Association Conference, Manila and Bataan, Philippines, 21 - 23 Oct 2018.
- Kontovas C., “Maritime OR opportunities for a green future”, Invited Talk, Greenbelt workshop, University of Southampton, 17 July 2018. (CK)

- Loughney S., "How automation can make offshore installations safer", The IChemE Chester & North Wales MG in collaboration with the University of Chester STEM Society, Thornton Science Park, University of Chester, Pool Lane, Chester, CH2 4NU, 23rd October 2018.
- Nguyen T.T., "Anticipating and mitigating reactionary delays – a case study on the Northern line of Merseyrail", in Data Sandbox: Improving Network Performance workshop organised by the Rail Safety and Standard Boards (RSSB), December 2018.
- Ren J., "Decision making methods in REMESH", in the research seminar of Mahidol University, Bangkok, Thailand, 12 June 2018.
- Ren J., "System dynamics modelling in SC management", Invited presentation in the research seminar of Southwest China Petroleum University, Chengdu, China, 23 June 2018.
- Ren J., "Risk analysis methods on Management accounting", invited presentation in the International conference of Asia-Pacific Management Accounting Association (APMAA), Tokyo, Japan, 29 October 2018.
- Yang Z., "Risk based resilience study of container supply chains", Invited plenary speech in the Associates of the Asper School of Business, Speaker Series 3, University of Manitoba, Canada, funded by Canadian Research Council, 2 May 2018.
- Yang Z., "Prioritising vehicle cleanliness", invited speech by the UK Transport Systems Catapult, TSC, UK, funded by the UK Research Council, 19 November 2018.

c. Participation in journal editorial boards

- Member of Editorial Board International Journal of Transportation Engineering and Technology. (DP)
- Member of the Review Board of Journal of Shipping and Ocean Engineering. (EBD)
- Member of the Review Board of International Journal of Ocean Systems Engineering (2013-date). (JR)
- Member of the Review Board of International Journal of Agile Systems and Management. (JR)
- Member of the Editorial Board for the American Journal of Neural Networks and Applications. (KJ)
- Member of the Editorial Board of Maritime Policy and Management. (JW)
- Deputy Editor of Journal of Marine Science and Technology. (JW)
- Associate Editor of Marine Engineering and Technology. (JW)
- Member of the Editorial Board for the International Journal of Intelligent Systems and Applications in Engineering. (KJ)
- Member of the Scientific Board for the Informatica Economica Journal (<http://revistaie.ase.ro/>). (KJ)
- Member of the Editorial Board for the Journal of Mathematical Control Science and Applications. (KJ)
- Member of editorial board of the Journal of Mechanical Engineering Research. (MA)
- Lead Guest Editor of a Special Issue in Mathematical Problems in Engineering. (QZ)
- Member of the Review Board of Marine Policy. (RP)
- 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. 10784. (TTN)
- 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)
- Associate Editor of IMA Journal of Management Mathematics. (ZY)
- Member of Editorial Board of Asian Journal of Shipping and Logistics. (ZY)

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

- Reviewer for the Cyprus Research Promotion Foundation (RPF), RESTART 2016-2020 Programmes for Research, Technological Development and Innovation. (CK)
- Evaluator for the Croatian Science Foundation, Call identifier: IP-01-2018. (CK)
- Reviewer for the (CK) NERC Natural Environment Research Council, 2018 Research Grant Call. (CK)
- Reviewer for the International Association of Maritime Universities' (IAMU) research grants programme, 2019. (EBD)
- 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)
- Reviewer and expert panel member of the Research Promotion Foundation Programmes for Research, Technological Development and Innovation "Restart 2016 – 2020), Cyprus. (JW)
- Member of sub-panel 12 (criteria phase, Engineering) in Research Excellence Framework (REF) in the UK 2021. (JW)
- Member of the UK EPSRC peer review college of experts. (JW, ZY)
- Reviewer for EPSRC (UK). (LL)
- Reviewer for The Netherlands Organisation for Scientific Research (NWO). (LL)
- Editorial Advisor, Cambridge Publishing Group. (TTN)
- External expert, National Science Centre Poland. (TTN)
- Member of the IEEE Task Force on Evolutionary Computation in Dynamic and Uncertain Environments. (TTN)
- Advisor of the UK Government for Science on "Future of the Sea" programme. (ZY)
- Evaluator/overseas expert/panel member of peer review bodies of the national research councils (or equivalent) of Norway, Poland, USA, UK, Romania, China, and Hong Kong. (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)
- Member of Institute of Electrical and Electronics Engineers. (LL)
- Member of American Institute of Aeronautics and Astronautics. (LL)
- Member of American Helicopter Society; Royal Aeronautical Society. (LL)
- Member of EG38 GARTEUR (Aeronautics research collaboration in Europe). (LL)
- Committee member of the Merseyside West Cheshire IET (RD)

- 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 Exeter. (AA)
- 1 PhD examination at the University of Central Lancashire. (JR)
- 1 PhD examination at the University of Derby. (JR)
- 1 PhD examination at the University of Stavanger (2018). (JW)
- 1 PhD examination at Luleå University of Technology. (MS)
- 1 PhD examination at the University of Manchester. (MS)
- 1 PhD examination at Warwick University. (RD)
- 1 PhD examination at Aberdeen University. (ZY)
- 1 PhD examination at Nanyang Technological University. (ZY)
- 1 PhD examination at Royal Melbourne Institute of Technology. (ZY)
- 1 PhD examination at the University of Reading. (ZY)
- 1 PhD examination at the University of Manchester. (ZY)

g. Involvement of conference organisation

- Chairman of the 15th conference track “Evolutionary Algorithms in Stochastic and Dynamic Environments (EvoSTOC)” as a part of the international EvoStar 2018 conference. (TTN)
- Co-Chair of the 4th International Conference on Structural Nano Composites (NANOSTRUCT 2018), May 23-24, 2018, Berlin. (MM)
- Chairman of the Reliability and Safety Engineering and Technology for large maritime engineering systems (RESET) / Maritime Safety and Smart Shipping (MSSS) Workshop, 20-21 June 2018, Trondheim, Norway. (JW)

h. Prizes/honours

- Best paper award nomination, 21st EvoApplications conference, Parma, Italy, 2018. (D. Yazdani, TTN, JW)
- The 64th annual winner of the prestigious “Award for Risk Reduction in Mechanical Engineering” for outstanding contribution in risk reduction of maritime/mechanical systems from the Institute of Mechanical Engineers (IMechE) in 2018. (JW)
- Recipient of prestigious 2017 RINA – Lloyd’s Register Maritime Safety Award for Lifetime Achievement for improvement of the safety of life at sea and the protection of the maritime environment through novel and improved design, construction and operational procedures, from Royal Institution of Naval Architecture (one award from the global marine community each year). (JW)
- Recipient of prestigious ‘Outstanding Contribution to Marine Safety’ award for 2017 from the Institute of Marine Engineering, Science and Technology. (JW)
- Emerald Literati Award Highly Commended Paper, paper title: ‘Application of Bayesian networks in analysing tanker shipping bankruptcy risks’, awarded by Emerald in Emerald Literati Award 2018. (ZY *et al.*)
- North East Asian Logistics Award by Incheon University, Asian Association of Shipping and Logistics and Ministry of Korean Ocean and Fishery, for outstanding research contribution to the North East Asian Logistics industry. (ZY)

i. Consultancy

- Advisor to ARUP Consulting for the Resilience Shift project <https://www.resilienceshift.org/> (DP)
- 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)
- Analysis of smoke and gas dispersions on oil and gas platforms using CFD techniques for MMI Engineering, UK. (SM)
- Merseyrail, Merseytravel, Peloton, Vauxhall. (TTN)
- UK DfT, AECOM, Transport Systems Catapult, TfGM, Mersey Travel, TfN. (ZY)

j. Others

- MSc thesis by Hazel Bryan came second in the Maritime Masters competition by Maritime UK. (DP)
- Member of Expert Panel for the Re-Accreditation of the Faculty of Maritime Studies, University of Split, Croatia, as appointed by the Agency for Science and Higher Education, Split, Croatia, 14-18 May 2018. (EBD)
- Chair of the Ballast Water Treatment Exemption Workshop, event promoted by Mersey Maritime and LJMU, Birkenhead, UK, 22 May 2018. (EBD)
- Working in partnership with Risktec Solutions delivering distance learning and face-to-face modules. (DBM)
- Development of a collaborative PhD programme in maritime and logistics management with Ningbo University China. (ZY *et al.*)

Appendix 1: Publications published in 2018

Books

1. Gujar G., Ng A.K.Y., Yang Z., Contemporary Container Security, Series in Palgrave Studies in Maritime Economics, Springer International Publishing AG, Switzerland, 2018.
2. Sim K., ..., Nguyen TT, *et al.* (Eds.), Applications of Evolutionary Computation, 21st European Conference, EvoApplications 2018, LNCS vol. 10784, Springer, 2018.

Book chapter

3. Zhang Q., Liu X., "Optimisation in friction stir welding: modelling, monitoring and design", In Optimization in Industry - Present Practices and Future Scopes, (Eds by Datta S. and Davim J.P.), Springer, 2018, 299-329.

Refereed academic journal papers (SCI cited)*

4. Armin M., Khorasanchi M., Day S., "Wake interference of two identical oscillating cylinders in tandem: An experimental study", Ocean Engineering, 2018, Vol.166, 311-323. (IF = 2.214)
5. Chen L.J., Yan X.P., Huang L.W., Yang Z.L., Wang J., "A systematic simulation methodology for LNG ship operations in port waters: A case study in Meizhou Bay", Journal of Marine Engineering and Technology, 2018, Vol.17(1), 12-32.
6. Chen Z.C., Chen T., Qu Z.H., Yang Z., Ji X.W., Zhou Y., Zhang H., "Use of evidential reasoning and AHP to assess regional industrial safety", PLOS One, 2018, Vol. 13(5), e0197125. (IF = 2,766)
7. Djačkov V., Žapnickas T., Čerka J., Mickevičienė R., Ašmontas Ž., Norkevičius L., Ronkaitytė I., Zhou P., Blanco-Davis, E., "Numerical simulation of a research vessel's aftpart hull form", Ocean Engineering, 2018, Vol.169, 418-427. (IF = 2.214)
8. Fan S.Q., Zhang J.F., Blanco-Davis E., Yang Z.L., Wang J., Yan X.P., "Effects of seafarers' emotion on human performance using bridge simulation", Ocean Engineering, 2018, Vol.170, 111-119. (IF = 2.214)
9. Jin Z.Z., Yang Z., Ge H.X., "Energy consumption investigation for a new car-following model considering driver's memory and average speed of the vehicles", Physica A: Statistical Mechanics and its Applications, 2018, Vol.56, 1038-1049. (IF = 2.132)
10. Kelly C. L., Blanco-Davis E., Michailides C., Davies P.A., Wang J., "Site selection appraisal for tidal turbine development in the River Mersey", Journal of Marine Science and Application, 2018, Vol.17(1), 112-121. (IF = n/a)
11. Lee, P.T.W., Cullinane K., Yang Z., Hu Z.H., "China's Belt and Road Initiative", Transportation Research Part E, 2018, Vol.117, 1-4. (IF = 3.289)
12. Li H., Liu J., Wu K., Yang Z., Liu R., Xiong N., "Spatio-temporal vessel trajectory clustering based on data mapping and density", IEEE Access, 2018, Vol.6, 58939-58954. (IF = 3.557)
13. Li C, Nguyen TT, Wu M, Yang M, Zeng S., "An open framework for constructing continuous optimization problems". IEEE Transactions on Cybernetics, 2018, online first at <https://ieeexplore.ieee.org/document/8353116>. (IF: 8.8).
14. Lin C.C., Chang C.H., "An evaluation of logistics skill requirement between international logistics service providers and academics", Asian Journal of Shipping and Logistics, 2018, Vol.34(4), 328-336. (IF = n/a)
15. Liu H.L., Tian Z.H., Huang A.Q., Yang Z., "Analysis of vulnerabilities in maritime supply chains", Reliability Engineering and System Safety, 2018, Vol.169, pp. 475-484. (IF = 4.139)
16. Loughney S., Wang J., Matellini D.B., "Utilising Bayesian networks to demonstrate the potential consequences of a fuel gas release from an offshore gas-driven turbine", Proc IMechE Part M: Journal of Engineering for the Maritime Environment, 2018, Vol.232, Issue 4, 402-420. (IF = 1.090)
17. Lu L., Jump M., Padfield G.D., "Development of a generic time-to-contact pilot guidance model", Journal of Guidance, Control, and Dynamics, Vol. 41(4), 2018, 904-915. (IF = 2.024)
18. Ma F., Chen Y.W., Yan X.P., Chu X.M., Wang J., "Target recognition for coastal surveillance based on radar images and generalised Bayesian inference", IET Intelligent Transport Systems, Vol.12(2), 2018, 103-112. (IF = 1.387)
19. Matellini D.B., Wall A.D., Jenkinson I.D., Wang J., Pritchard R., "A three-part Bayesian network for modelling dwelling fires and their impact upon people and property", Risk Analysis, 2018, Vol.38(10), 2018. (IF = 2.898)
20. Mathur A., Seddighi M., He S., "Transition of transient channel flow with high Reynolds number ratios entropy", 2018, Vol.20(5), doi:10.3390/e20050375. (IF = 2.305)
21. Mathur A., Gorji S., He S., Seddighi M., Vardy A.E., ODonoghue T., Pokrajac D., "Temporal acceleration of a turbulent channel flow", Journal of Fluid Mechanics, 2018, Vol.835, 471-490. (IF = 2.82)
22. Messina M., Njuguna J., Palas C., "Mechanical structural design of a MEMS-based piezoresistive accelerometer for head injuries monitoring: a computational analysis by increments of the sensor mass moment of inertia", Sensors, Vol.18(1), 289, 2018. (IF = 2.475)
23. Ng A.K.Y., Wang T., Yang Z., Li K.X., Jian C.M., "How is business adapting to climate change impacts appropriately? Insight from the commercial port sector", Journal of Business Ethics, 2018, Vol.150, 1029-1047. (IF = 2.917)
24. Ng A.K.Y., Zhang H., Afenyo M., Becker A., Cahoon S., Chen S.L., Esteben M., Ferrari C., Lau Y.Y., Lee P.T.W., Monios J., Tei, A., Yang Z., Acciaro M., "Port decision-maker perceptions on the effectiveness of climate adaptation actions", Coastal Management, Vol.46(3), 2018, 48-175. (IF = 0.973)
25. Poo M.C.P., Yang Z., Dimitriu D., Qu Z., "Review on seaport and airport adaptation to climate change: a case on sea level rise and flooding", Marine Technology Society Journal, 2018, Vol.52(2), 1-10. (IF = 0.708)
26. Seo Y.J., Ha M.H., Yang Z., Bhattacharya S., "The ship management firm selection: The case of South Korea", Asian Journal of Shipping and Logistics, 2018, Vol.34(3), 258-268. (IF = n/a)
27. Stavrou D., Ventikos N., Yang Z., "Benchmarking port security risks by applying a FIS methodology", International Journal of Shipping and Transport Logistics, 2018, Vol.10, 377-405. (IF = 0.928)
28. Ugurlu O., Yildiz S., Loughney S., Wang J., "Modified human factor analysis and classification system for passenger vessel accidents (HFACS-PV)", Ocean Engineering, Vol.161, 2018, 47-61. (IF = 2.214)
29. Wan C., Yang Z., Yan X.P., Zhang D., "Resilience in transportation systems: A systematic review and future directions", Transport Reviews, 2018, Vol.38(4), 479-498. (IF = 4.647)
30. Wan C., Zhang D., Yan X.P., Yang Z., "A novel model for the quantitative evaluation of green port development – A case study of major ports in China", Transportation Research Part D: Transport and Environment, 2018, Vol.61, 431-443. (IF = 3.445)
31. Wahab D.A., Blanco-Davis E., Ariffin A.K., Wang J., "A review on the applicability of remanufacturing in extending the life cycle of marine or offshore components and structures", Vol.169, 2018, 125-133. (IF = 2.214)
32. Wang L., Yang Z., "Bayesian network modelling and analysis of accident severity in waterborne transportation: A case study in China", Reliability Engineering & System Safety, 2018, Vol.180, 277-289. (IF = 4.139)

* IF: Impact Factor.

33. Wang R., Nguyen T.T., Li C., Jenkinson I., Yang Z., Kavakeb S., "Optimising discrete dynamic berth allocations in seaports using a levy flight based meta-heuristic. swarm and evolutionary computation", Online published at <https://doi.org/10.1016/j.swevo.2018.10.011>, 2018 (IF: 3.81).
34. Yang Z.S., Yang Z., Qu Z.H., Yin J.B., "A risk-based game model for rational inspections in port state control", *Transportation Research Part E: Logistics and Transportation Review*, 2018, Vol.118, 477-495. (IF = 3.289)
35. Yang Z., Lun V., Lee P., "Container transportation: Resilience and sustainability", *Transportation Research Part D*, 2018, Vol.61, 420-422. (IF = 3.445)
36. Yang Z.S., Yang Z., Yin J., "Realising advanced risk-based port state control inspection using data-driven Bayesian networks", *Transportation Research Part A: Policy and Practice*, 2018, Vol.110, 38-56. (IF = 3.026)
37. Yang Z., Ng A., Lee P.T.W., Wang T., Qu Z., Rodrigues V.S., Pettit S., Harris I., Zhang D., Lau Y.T., "Risk and cost evaluation of port adaptation measures to climate change impacts", *Transportation Research Part D*, 2018, Vol.61, 444-458. (IF = 3.445)
38. Yazdani D., Nguyen T.T., Branke J., "Robust optimization over time by learning problem space characteristics", *IEEE Transactions on Evolutionary Computation*, online published at <https://ieeexplore.ieee.org/document/8371222>, 2018. (IF: 8.12)

Refereed conference papers

39. Crnigoj S.C., Jones K.O., Ellis D.L., Otterson P., Wylie S., "Investigating binaural localization abilities for proposing a standardised testing environment for binaural systems, Proceedings of the 32nd International Conference on Information Technologies (InfoTech 2018), 149 – 156 (ISSN: 1314-1023).
40. Fan S., Zhang J., Yan X., Blanco-Davis E., Yang Z., Wang J., "Study on seafarers' emotion identification during watch-keeping using bridge simulation", In *Safety and Reliability–Safe Societies in a Changing World*, CRC Press, Safety and Reliability – Safe Societies in a Changing World Proceedings of ESREL 2018, 17-21 June 2018, Trondheim, Norway, 347-354.
41. Guo, F.B (2018). Shifting Product Design from Technology Driven to User Centre Design Driven. Conference proceeding: '3rd International Conference on Design & Production Engineering', Valencia. 3rd December 2018. ISSN: 2168-9873.
42. Koh S.S., Zhou B., Yang P., Yang Z, Fang H., Feng J., "Reinforcement Learning for Vehicle Route Optimization in SUMO", 16th IEEE International Conference on Smart City, 28-30 June 2018, Exeter, UK.
43. Loughney S., Wang J., Matellini B., Pemberton K., "An investigation identifying trends between the enforcement of offshore safety case regulations and the occurrence of vessel to platform collision incidents", *Safe Societies in a Changing World, Proceedings of the 28th European Safety and Reliability Conference (ESREL)*, 17-21 June 2018, Trondheim, Norway.
44. Olubitan O., Loughney S., Wang J., Bell, R. "An investigation and statistical analysis into the incidents and failures associated with dynamic positioning systems", *Proceedings of the 28th European Safety and Reliability Conference (ESREL)*, 17-21 June 2018, Trondheim, Norway.
45. Onakoya R., Qu Z., Yang Z., "Safety and hazards of transporting food products: A systematic review", 2nd International Scientific Conference on Sustainable Agriculture and Environment (SEA), 13-15 December 2018, Ho Chi Minh City, Vietnam.
46. Poo M.C.P., Yang Z., Dimitriu D., Qu Z., "Climate adaptation for seaports by Climate Change Risk Indicators (CCRI)", 1st Conference of The Yangtze-River Research and Innovation Belt (Y-RIB), 2-5 December 2018, Zhoushan, China.
47. Poo M.C.P., Dimitriu D., Qu Z., Galatioto F., Ruston C., Lee T.W., Yang Z., "Prioritizing Vehicle Cleanliness (PVC) using Key Green Performance Indicators (KGPI)", *Project Logistics Conference (PROLOG2018)*, 28-29 June 2018, Hull, UK.
48. Rasani M.R., Bashir M., Wang J., "Effect of location in a cylinder wake on dynamics of a flexible energy harvesting plate", 2nd International Symposium on Fluid Mechanics and Thermal Sciences (2nd IS-FMTS 2018), 1st December 2018, Malaysia-Japan International Institute of Technology (MJIIT), Kuala Lumpur, Malaysia.
49. Wang T., Qu Z, Nichol T., Yang Z., Dimitriu D., Clarke G., Bowden D., "How can the UK road system be adapted to the impacts posed by climate change? By creating a climate adaptation framework", *Project Logistics Conference (PROLOG2018)*, 28-29 June 2018, Hull, UK.
50. Wang T., Qu Z, Nichol T., Yang Z., Dimitriu D., Clarke G., Bowden D., "Impacts of climate change on rail systems: A new climate risk analysis model", *European Safety and Reliability Conference 2018 (ESREL18)*, 17-21 June 2018, Trondheim, Norway.
51. Yang Y., Bashir M., Wang J., Li "Seismic analysis of a 10 MW offshore wind turbine with a monopile", *The 7th Asia Conference on Earthquake Engineering*, 22-25 November 2018, Bangkok, Thailand.
52. Yang Y., Bashir M., Li C., Loughney S., Wang J., "Analysis of the dynamic behaviour of 10MW bottom-fixed offshore wind turbines", 3rd International Conference on Offshore Renewable Energy (CORE), 29-30 August 2018, Glasgow, UK.
53. Yazdani D, Nguyen TT, Branke J, Wang J.. "A multi-objective time-linkage approach for dynamic optimization problems with previous-solution displacement restriction", 21st International Conference on the Applications of Evolutionary Computation (EvoApplications) 10784, 2018, 864-878.
54. Yazdani D., Branke J., Omidvar M.N., Nguyen T.T., Yao X., "Changing or keeping solutions in dynamic optimization problems with switching costs", *GECCO 2018 - Proceedings of the 2018 Genetic and Evolutionary Computation Conference*, 1095-1102 .
55. Zhao Y., Guo F.B., Du H., "A pedagogical study of industrial design education for Industry 4.0", Conference proceeding of the 3rd International Conference on Design & Production Engineering', 3 December 2018, Valencia, ISSN: 2168-9873.

Other publications

56. Hassan S., "Cross country pipeline risk-based failure prediction using hybrid fuzzy evidential reasoning in FMEA", the 18th HSE biennial conference on the oil and gas industry, 26-28 November, 2018, Lagos, Nigeria.
57. Loughney S., Wang J., "How automation will make oil rigs safer", <https://theconversation.com/how-automation-will-make-oil-rigs-safer-95194>, The Conversation UK, <https://theconversation.com/uk>, April 2018, also published in the mainstream tech web media (nextweb) <https://thenextweb.com/syndication/2018/05/06/how-automation-will-make-dangerous-oil-rigs-safer-for-workers/>.
58. Poo M.C.P., Yang Z., Dimitriu D., Qu Z., "Development of climate change risks Indicators (CCRI) for seaports and airports", *International Workshop towards an International Consortium on Climate Change and Adaptation Planning for Ports, Transportation Infrastructures, and the Arctic (CCAPPTIA)*, 3-5 May 2018, Manitoba, Canada.
59. Wang J, "Sanchi oil tanker disaster: how accidents can make ships safer", <https://theconversation.com/drafts/90207>, <https://theconversation.com/sanchi-oil-tanker-disaster-how-spills-and-accidents-can-make-ships-safer-90207>, The Conversation UK, <https://theconversation.com/uk>, January 2018.
60. Wang T., Qu Z, Nichol T., Yang Z., Dimitriu D., Clarke G., Bowden D., "Rail network adaptation to climate change: A UK case", *International Workshop towards an International Consortium on Climate Change and Adaptation Planning for Ports, Transportation Infrastructures, and the Arctic (CCAPPTIA)*, 3-5 May 2018, Manitoba, Canada.

Appendix 2: LOOM monthly seminars in 2018

Time: 10.00-11.15, first Wednesday of each month from February 2018.

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 2018, LOOM has delivered 13 research seminars with 5 external researchers providing invited presentations.

Second Quarter – Chairing person: **Dr. E. Blanco** / Dr. Chia-Hsun Chang / Dr. J. Ren

14th March

Ahmed Makki “Dynamic alignment capacity estimation by utilizing a novel PCE estimation method”
Charly Lersteau “Container stacking”

11th April

Cameron Kelly “Investigation into the uses of Life Cycle Analysis (LCA) as an alternative method of selecting tidal power schemes”
Danial Yazdani “Dynamic optimisation”

16th April, 10 to 11am, Room 326, 3rd Floor, James Parsons Building.

Prof. Paul Tae-Woo Lee (external speaker), Professor of Maritime Transport and Logistics and Director of Institute of Maritime Logistics at Ocean College, Zhejiang University, China

Presentation title: “Sustainability and green port”

Abstract: Sustainability and green port have been becoming focal and significant issues in academic field, maritime industry, governments and international organizations. This presentation aims to overview the sustainability issue in port sector with a sketch of its definitions, related topics and methodology through a comprehensive literature review of peer-reviewed papers. Second, it introduces practice of greening ports in Asia. Next, it discusses about evaluation criteria of green ports and then shares an APEC case of how to evaluate performances of green ports. Finally, it ponders away ahead towards building sustainable development of a (green) port from the perspectives of stakeholder in greening ports.

2nd May

- Igor Deplano

Dr. Ozkan Ugurlu, Mr Serdar Yildiz (external speakers), Karadeniz Technical University, Turkey

Presentation title: “Modified human factor analysis and classification system for passenger vessel accidents (HFACS-PV)”

Abstract: With the increase in the carrying capacity of passenger vessels parallel to technological developments over the last 25 years, accidents resulting in loss of lives have increased. Thus, accidents involving passenger vessels have become a major issue of concern in the maritime industry. In this study, we examined 70 ship collision & contact accidents involving passenger vessels between 1991 and 2015. Unlike other studies in the literature, this investigation proposes a customized Human Factors Analysis and Classification System for Passenger Vessel Accidents (HFACS-PV) to facilitate analyzing the human factor in passenger vessel accidents. In addition to the core HFACS structure, we have defined an additional Environment level; the violations framework has been divided into the three sub-categories of rule violations, procedure violations, and abuse of authority, instead of the two broad categories of routine and exceptional violations. Abuse of authority is an intentional violation made knowingly and wilfully. Therefore, abuse of authority was considered separately. Furthermore, minor modifications have been made to the headings under the second level of HFACS-Preconditions for Unsafe Acts for compliance with the maritime industry. It has therefore become easier to analyze and interpret accidents involving passenger vessels.

6th June

Atiyah Atiyah
Shiqi Fan

“Developing a Novel Marine Pilot’s Reliability Index (MPRI) using a mixed-method approach”
“Effects of seafarers’ emotion on human performance using bridge simulation”

Third Quarter – Chairing person: **Dr. Dimitrios Paraskevadakis** / Dr. T.T. Nguyen / Dr. Musa Bashir

4th July

- Ran Wang

Dr. Wonsiri Punurai (external speaker), Mahidol University, Thailand

Presentation title: “Monitoring Vibration-based Structural Health using Metaheuristic Approach”

Abstract: Over decades, the interest in developing techniques for long-term online monitoring of aging engineering structures has greatly increased. Instead of inspecting the system at fixed time intervals, researchers want to monitor its health in service, by continuously extracting characteristic parameters that allow conclusions to be drawn on the structure’s useful remaining lifetime, the next repair/maintenance, or the need for immediate shutdown. Motivated by concept of smart structure (with respect to its dynamic behavior), an existing structure is to retrofit with a set of sensors. To see if structural condition has changed, the actual measurement data have to be evaluated and compare to the reference values which derive from the undamaged state of the monitored system through time frequency representations. However, it can be very difficult to link the evaluation of the measurement data with the physical interpretation of the damage states. For these reasons, the vibration-based structural health using metaheuristic approach should be advantageous. By applying this technique,

the damage detection is considered as an optimization inverse problem and the unknown parameters of damage can be forecasted automatically and accurately through the deviation minimization between experimental and simulated natural frequencies. This research discusses the use of adaptive metaheuristics algorithm to provide an automatic detection of denting damage in an offshore structure. A model is developed combining with the percentage of the dent depth of damaged member diameter and is used to assess the performance of the method. It is demonstrated that the small changes in the diameter of individual damaged bracing members of the fixed offshore jacket platform are detectable from measurements of global structural

1st August

Zhisen Yang
Sean Loughney

“Data-driven BN model of PSC inspections”

“Utilizing the evidential reasoning approach to determine the most suitable wireless sensor network orientation for use in asset integrity monitoring of an offshore electrical generation system”

5th September

Yannis Ancele
Ademola Ishola

“Dynamic Multi-Objective Vehicle Routing Problem with Request Prediction”

“Safety modelling approach for risk management of petroleum and gas refineries”

18th September

Prof. Lirong Cui (external speaker), School of Management & Economics at Beijing Institute of Technology, China

Presentation title:

“Reliability team in BIT and its research works”

Abstract:

In this talk, we first introduce our university: Beijing Institute of Technology (BIT), then give an introduction to our reliability team in school of management & economics, BIT, in which our faculty, students and their research works are introduced. Two research works: (1) Reliability modelling on consecutive-k systems, symmetry balanced systems, cascading failures and (2) Maintenance modelling and analysis by using aggregated stochastic processes, are discussed in detail. Finally, the possible targets/outputs for collaborations are proposed.

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

3th October

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

Augustine Ehiagwina

“Modelling ship emissions using an agent-based approach: An introduction to the research”

18th October, 15:00 to 16:00, Room 302, James Parsons Building

Professor Jasmine Lam Siu Lee (external speaker), Nanyang Technological University, Singapore.

Presentation title:

“Cyclone Risk Mapping and Model for Critical Coastal Infrastructure”

Abstract:

Seaport as a critical coastal infrastructure is vulnerable to natural hazards. Cyclone-induced hazards to coastal areas include strong wind, rain, high waves, storm surge/tide, and floods. This presentation covers cyclone risk mapping for critical coastal infrastructures and a cyclone risk model for container terminals. Risk mapping at a regional level serves significant purposes at identifying and mapping risk hotspots to prioritise the need for risk-reduction strategies and improve risk management. The cyclone risk model considers physical vulnerability based on geographical location, and spatial distribution of infrastructures and assets for risk assessment. Practical examples are used for illustration.

7th November

Shamsudeen Hassan

“Cross country pipeline risk-based failure prediction using hybrid fuzzy evidential reasoning in FMEA”

Gregory Asuelimen

“Advanced risk management for marine arctic seismic survey operation”

3rd December, Room 301, James Parsons Building, Presented at a technical event at the IMarEST North West England Branch,

Cameron Kelly

“Site selection of tidal power devices”.

Ahmed Makki

“Effect of Liverpool container terminal expansion on road congestion”.

Loughney S., Pemberton K

An investigation identifying trends between the enforcement of offshore safety case regulations and the occurrence of vessel to platform collision incidents”