

# 2015 Annual Research Outcome Report of Liverpool Logistics, Offshore and Marine (LOOM) Research Institute



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## LOOM members in 2015

Dr. Mohab Abou-Elkawam (MAE)  
Dr. David R. Allanson (DRA)  
Dr. Eduardo Blanco-Davis (EBD)  
Dr. Steve Bonsall (SB)  
Dr. Robert Darlington (RD)  
Dr. Stephen Fairclough (SF)  
Prof. Ian Jenkinson (IJ)  
Dr. Karl Jones (KJ)  
Dr. Dante Ben Matellini (DBM)  
Dr Marco Messina (MM)  
Dr. Trung Thanh Nguyen (TTN)  
Dr. Jun Ren (JR)  
Dr. Ramin Riahi (RR)  
Dr. Charles Roberts (CR)  
Dr Mehdi Seddighi (MS)  
Dr. Alan Wall (AW)  
Prof. Jin Wang (JW)  
Prof. Zaili Yang (ZY)  
Dr. Lihong Zhang (LZ)

## Other members involved in PhD supervision at LOOM

Prof. David Andrews (DA) of UCL, UK  
Mr. Phil Davies (PD)  
Miss Pauline Floode (PF)  
Prof. Wlodzimierz (Vlad) Kaczynski (WK), Univ. of Washington  
Ms Barbara Kelly (BK)  
Dr. S. Miri Lavasani (SML)  
Prof. Kevin X. Li (KXL) of Chung Ang Univ  
Prof. Charles Morecroft (CM), Pharmacy and Biomolecular Sciences  
Dr. Adolf Ng (AN), University of Manitoba, Canada  
Mr. Geraint Phylip-Jones (GPJ)  
Capt. F. Saeed (FS)  
Prof. Jens U. Schroeder-Hinrichs (USH) of WMU, Sweden  
Dr. Yuhong Wang (YW), Napier University  
Prof. Shengxiang Yang (SY), De Montford University

## LOOM researchers (doctoral/postdoctoral) in 2015

Ayman Alghanmi  
Saleh Fahed Saleh Al-Khatib  
H. Al Yami  
M. Asuguo  
Denis Atehnijia  
A. A. Atiyah  
A. Babader  
A. Bury  
Dr S.N. Chaurasia  
A. Dantsoho  
D. Franks  
M. Ha  
Wanzul Bin Abdul Halim  
S. Haddad  
I. C. Ikewete  
A. Isola  
M. Kasaeyan  
S. Kavakeb  
B. Kelly  
C. Li  
S. Loughney  
Fayas Ahmad Najib  
I. Nawaz  
D. Paraskevadakis  
Z. Qu  
F. Saad  
M. Said  
N. H. B. M. Salleh  
A. Y. Taha  
A. Y. Usman  
M. Usman  
A. Waddah  
C. Wan  
R. Wang  
Z. Yang

## Visiting researchers

Dr. L.J. Chen  
Mr. M.W. Heo  
Ms Rudiah Binti Md Hanafiah  
Prof H.W. Kim  
Dr. L.Z. Sang  
Dr. Q.M. Shang  
Mr A.X. Zhang  
Dr. H.M. Zhou

## Visiting professor

Professor Ron Bell, Director  
of Engineering Safety  
Consultants Ltd, UK

This report outlines the research outcomes produced by the LOOM Research Institute from January to December 2015 in terms of the following:

- Research publications.
- Doctoral, postdoctoral and other research projects.
- External research grants.
- Evidence of national and international peer esteem.
- LOOM's monthly seminars.

It has been identified that the emphasis in 2015 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 2015)

The following are the outputs published in 2015 (for details, see Appendix 1):

- 1 book.
- 2 edited books.
- 4 book chapters.
- 18 SCI-cited refereed journal papers.
- 2 other academic journal papers.
- 22 refereed conference papers.
- 4 other publications.

## 2. Doctoral, postdoctoral and international research visiting projects (completed, on-going and started in 2015)

### 2.1 Research projects completed in 2015

#### PhD projects

1. Dr. D. Atehnijia, "Formal safety assessment of dry docking operations" (2012-2015), funded by the Commonwealth Scholarship. (ZY, RR, JW, KJ)
2. Dr. Z. Qu, "Analytical quality control in shipping operation using Six Sigma principles" (2012-2015), funded by EU. (IJ, JW)
3. Dr. N. H. B. M. Salleh, "Supply chain risk assessment and management in liner shipping industry under high uncertainties" (2012-2015), funded by Malaysian Government. (RR, JW, ZY)
4. Dr. A. Dantsoho, "Risk assessment of onshore petroleum terminals and tank farms" (2011-2015), funded by the Nigerian Port Authority. (AW, RR, JR)
5. Dr. A. Babader, "Environmental impact modelling and optimisation of waste packaging" (2011-2015), funded by Saudi Arabian Government. (JR, JW, KJ)
6. Dr. F. Saeed, "An analysis of deck officer training and assessment for crisis management situation" (2010-2015). (AW, RR, CR, PD)
7. Dr. S. Kavakeb, "Optimisation of Container Port Operations" (2011-2015), funded by EU. (TTN, ZY, IJ)
8. Dr. M. Kasaeyan, "Advanced risk management of mobile offshore drilling units" (2011-2015). (JW, IJ, SB)
9. Dr. S. Fahed Saleh Al-Khatib, "Integrated models for strategic evaluation and selection of logistics service providers" (2013-2015), funded by Yarmouk University, Jordan. (RD, ZY, TTN)

#### Visiting researcher projects

10. Dr. L.J. Chen, "Intelligent navigational risk assessment and management" (2014-2015), from Wuhan University of Technology and funded by China Scholarship Council. (JW, *et al.*)
11. Mr. M.W. Heo, "Maritime Policy Study" (2014-2015), funded by Korean Government. (ZY, JW, IJ)
12. Prof H.W. Kim, "Green port" (2014 – 2015), funded by Korean Maritime University. (ZY)
13. Dr. L.Z. Sang, "Real-time accident risk assessment of ships in inland bridge waterway" (2014-2015), from and funded by Wuhan University of Technology. (JW, AW)
14. Dr. Q.M. Shang, "Simulation of marine engine" (2014-2015), from Wuhan University of Technology and funded by China Scholarship Council. (TTN, ZY)
15. Dr. H.M. Zhou, "Gaming theory in maritime risk" (2014-2015), from Wuhan University of Technology and funded by China Scholarship Council. (ZY)
16. Ms Rudiah Binti Md Hanafiah, "The Development of Decision Making Models on the Tanker Steaming Speed - A Case Study Approach from Malaysian Petrochemical Industry" (Feb.-May 2015), from Malaysia Institute of Transport (MITRANS), Universiti Teknologi Mara (UTM), funded by the Consulate General of Malaysia. (JR)

### 2.2 On-going research projects in 2015

#### Doctoral projects

1. H. Al Yami, "Assessment and its application to sea port systems" (2010-2016), funded by Saudi Arabian Government. (ZY, RR, JW)
2. D. Franks, "Risk assessment of royal fleet auxiliary services" (2009-2016), funded by MoD. (JW, AW, ZY)
3. S. Haddad, "A study of the implementation of relationship marketing (RM) approach in supply chain performance" (2010-2016), funded by Arab Academy for Science, Technology & Maritime Logistics. (JR, JW, AW)
4. M. Asuguo, "Development of an efficient planned maintenance framework for marine and offshore machineries operating under highly uncertain environments" (2012-2017). (RR, JW, GPJ)
5. M. Ha, "Port logistics performance measurement" (2012-2016). (ZY, AN, SB)
6. I. C. Ikewete, "A risk based framework for design, inspection and maintenance of offshore wind farm turbines" (2012-2017). (RR, *et al.*)
7. C. Li, "A system dynamics approach for chemical supply chain risk management: modelling and simulation" (2012-2016), partially funded by an EU grant. (JR, *et al.*)
8. I. Nawaz, "Risk based verification of offshore installations on the United Kingdom continental shelf" (2012-2017), funded by Lloyds Register. (DBM, JW, AC)
9. A. Y. Usman, "Research on quantifying risk assessment of container terminal operations" (2012-2017). (JR, JW, KJ)
10. M. Said, "Risk and Safety Assessment of Pilotage Operations" (2010-2015), funded by Malaysian Government. (AW, JW, USH)
11. 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)
12. A. Bury, "Short sea shipping as part of an East/West axis in European logistics" (2011-2016), funded by EU. (AW, JW, JR)
13. D. Paraskevadakis, "An importance-performance analysis of intermodal freight transport chain infrastructures and strategic decision making towards optimisation" (2011-2016), funded by EU. (JR, JW, AW)
14. A.Y. Taha, "Use of it for onboard training of marine officers" (2011-2016), funded by Arab Academy (AW, MJ, BK)
15. 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)
16. 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)
17. W.M. Abdul Halim, "Shipping network analysis" (2003-2017), funded by Universiti Malaysia Terengganu. (ZY, TTN, YW)
18. A. Ishola, "Safety Modelling Approach for risk management of petroleum and gas refineries" (2014-2017). (DBM, *et al.*)
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. (RR, *et al.*)
20. S. Loughney, "Offshore e-integrity case" (2014-2017), funded by MRRI and LJMU. (JW, *et al.*)
21. M. Usman, "Health Management of Marine Engine" (2015-2019), funded by Lloyds Register and LJMU. (ZY, JW, RR)

### 2.3 Research projects started in 2015

#### Postdoctoral projects

1. Dr. S. Kavakeb, "Transport system simulation and optimisation" (2015-2016), funded by BC. (TTN, *et al.*)
2. Dr S.N. Chaurasia, "Logistics optimisation" (2015-2017), funded by UK BIS. (TTN, *et al.*)

#### Doctoral projects

3. C. Wan, "Risk assessment of container supply chains" (2015-2018), funded by Chinese government, EU and LJMU (dual PhD) (ZY, *et al.*)
4. Z. Yang, "Maritime risk assessment using gaming theory" (2015-2018), funded by LJMU and EU. (ZY, *et al.*)
5. Miss Ran Wang, "Simulation of city transport systems" (2015-2018), funded by LJMU. (TTN, *et al.*)
6. Ms B. Kelly, "An analysis of recruitment techniques in the selection of deck cadets in the UK Merchant Navy and identification of factors that contribute to retention of Deck Officers in the UK Merchant Navy" (2015-2019). (EBD, *et al.*)
7. 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, CM, JW)

### 3. LOOM monthly seminars in 2015

8 LOOM monthly seminars were organised in 2015. The following external speakers delivered their presentations at LOOM's monthly seminars:

- Geoff Clark, Regional Director for Freight & Logistics for AECOM.
- Dr Di Zhang, Associate Professor, National Engineering Research Center for Water Transport Safety (WTS Center), Wuhan University of Technology, China.
- Dr Salman Nazir, Researcher at Buskerud and Vestfold University College, Norway.
- Prof. Sam Kadar, Faculty of Mechanical Engineering, Universiti Teknologi Malaysia

The detailed LOOM monthly seminars in 2015 are shown in Appendix 2.

### 4. Research grants in 2015

#### 4.1 External grants

##### Grants completed in 2015

• Weastflows – freight movements in NWE (EU, 2011-2015)	£320,000 (of €4.5m)	(JW, ZY, JR, AW, SB)
• Waste re-use (Saudi Government, 2014-2015)	£6,000	(JR)
• Virtual port simulation (CILT, 2014-2015)	£7,500	(TTN)
• Green economic vehicles (RCUK NEMODE, 2014-2015)	£3,000	(TTN, YZ, JW, IJ)
• Marine policy comparison (Korean government, 2014-2015)	\$10,000	(ZY, JW, IJ)
• Green Port (Korean Maritime and Ocean Univ., 2014-2015)	£3,000	(ZY)
• InTraDE1 – Transferability of IAVs (EU INTERREG, 2014-2015)	€32,000	(ZY, TTN, JW, IJ)

##### On-going grants in 2015

• 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, ZY, AC)
• Offshore e-integrity case (RMRI, 2014-2017)	£30,000	(JW, <i>et al.</i> )
• FETCH: Future Edu. & Training in Computing (EU, 2013-2016)	€29,548 (of €1.127k)	(KJ)
• ENRICH – Integrated Container Supply Chains (EU, 2013-1017)	€592,000	(ZY, JW, RR)
• Risk-based maintenance (LR, 2014-2017)	£5,700	(ZY, JW)
• TSB VoyagOR (Technology Strategy Board, 2014-2016)	£20,000	(ZY, TTN, JW, IJ)

##### Grants started in 2015

• Visiting professorship award (Royal Acad. of Eng., 2015-2018)	£30,000	(JW)
• An open-source modelling platform (Nippon Foundation, 2015-16)	\$47,162	(Matthews, IJ)
• UK-ASEAN partnership in ICT (British Council, 2015-2016)	£40,166	(TTN, IJ, YZ, JW)
• Maritime logistics research (UK BIS, 2015-2017)	£141,00 (out of £300k)	(TTN, IJ, YZ, JW)
• Climate Adaptation in Transportation (AECOM, 2015-2017)	£30,000	(ZY <i>et al.</i> )
• SeaConAZ - Exploring Sea Containers (RC of Norway, 2015-18)	£25,000 out of £700,000	(ZY)
• Route Optimisation through Simulation (Red Ninja Ltd, 2015-18)	£30,000	(ZY)

##### Grants awarded in 2015

• Newton research collaborations programme (RAEng, 2016-2017)	£24,000	(TTN)
• EU H2020 Marie Curie RISE network (PRIGeoC, 2016-2020)	€108,000 (out of €516k)	(JW, ZY, XJ Ren)

### 5. Evidence of national and international peer esteem in 2015

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

- Keynote address, "Data uncertainty modelling in maritime transport", the 3rd International Conference on Transportation Information and Safety, June 25 – June 28, 2015, Wuhan, P. R. China. (JW)

#### b. Participation in journal editorial boards

- International Journal of Agile Systems and Management (2007- date). (JR)
- International Journal of Ocean Systems Engineering (2013-date). (JR)
- Member of the Editorial Board of Journal of Transportation Engineering. (JW)
- 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)
- Editorial board member of Asian Journal of Shipping and Logistics (since 2013). (JW)
- Editorial board member of Journal of Shipping and Ocean Engineering (since 2013). (JW)
- Editorial board member of Chinese Journal of Mechanical Engineering (since 2014). (JW)
- Member of Scientific Board of Scientific Journals of Maritime University of Szczecin (since 2014). (JW)
- Member of the Editorial Board for the Journal of Mathematical Control Science and Applications. (KJ)
- Member of the Scientific Board for the Informatica Economica Journal (<http://revistaie.ase.ro/>). (KJ)
- Member of the Editorial Board for the International Journal of Intelligent Systems and Applications in Engineering. (KJ)
- Member of the Editorial Board for IEEE Transactions on Affective Computing. (SF)
- Editor of Springer's Lecture Notes in Computer Science book Vol. 8602. (TTN)
- Member of Editorial Board, Frontiers in Robotics and AI journal, Section Computational Intelligence (TTN)
- Member of Editorial Board of International Advanced Research Journal in Science, Engineering and Technology. (TTN)
- Guest Editor of Transportation Research Part D: Transport and Environment (TRD) (2014-2016). (ZY)
- Guest Editor of International Journal of Shipping and Transport Logistics (IJSTL) (2014-2016). (ZY)
- Guest Editor of Transportation Research Part E: Logistics and Transport Review (TRE) (2015-2017) (SCI-cited). (ZY)
- Guest Editor of Growth and Change: An International Journal (G&C) (2012-2015) (SSCI-cited). (ZY)
- Section Associate Editor of the Maritime Economist (2014-). (ZY)
- Member of Editorial Board of Journal of Traffic and Transportation Engineering (JTTE) (2014-). (ZY)
- Member of Editorial Board of Shocks and Vibrations (S&V) (2013-). (ZY)
- Associate Editor of IMA Journal of Management Mathematics (JMM) (2013-). (ZY)
- Member of Editorial Board of Asian Journal of Shipping and Logistics (AJSL) (2013-). (ZY)
- Member of Editorial Board of Advanced Shipping and Ocean Engineering (ASOE) (2012-). (ZY)
- Member of Editorial Board of Engineering Management Research (EMR) (2012-2015). (ZY)
- Member of Editorial Board of International Journal of Marine Science and Engineering (IJMSE) (2011-). (ZY)
- Member of Editorial Board of Journal of Shipping and Ocean Engineering (JSOE) (2011-). (ZY)
- Editorial Board of Members (EBMs) of book series in shipping, port and maritime logistics by Anthem Press (2015-). (ZY)
- Editorial Board of Members (EBMs) of Asian Social Science (2015-) (ZY)

#### ***c. Participation in national or international advisory, review, funding, standards or planning bodies***

- Member of committee for Deck Officer Qualifications & Standards of IAMI. (AW)
- Advisor on the Ports and Terminals Advisory Group for UK Trade & Investment (UKTI). (IJ)
- Member of the UK EPSRC peer review college of experts. (JW)
- Member of the IMO Formal Safety Assessment Experts Group. (JW)
- Reviewer for the Higher Education Academy (Teaching Development Grants). KJ
- Reviewer for the Higher Education Academy (Mike Baker Doctoral Programme). KJ
- Full accredited IMO consultant. (MAE)
- Review of grant applications for EU, EPSRC, Research Council of Norway, the Leverhulme Trust, *etc.* (most LOOM members)

#### ***d. Learned society involvement***

- 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 Council of the Maritime Security & Safety Group at the Society of Maritime Industries. (JW)
- Member of the IMO's Formal Safety Assessment (FSA) Experts Group. (JW)
- Fellow of the Higher Education Academy. (KJ)
- Member of Council for the Institute of Measurement and Control. (KJ)
- Hon. Secretary of NW England and N Wales Branch of Nautical Institute. (SB)
- Member of Education and Training Committee and also Technical Committee of the Honourable Company of Master Mariners. (SB)
- Treasurer NW Outport Honourable Company of Master Mariners (HCMM). (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)
- Committee member of International Association of Maritime Institutions. (RR)
- Committee member of the Marine Transport & Navigation Group (MTNG) of the RIN. (AW)
- 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 Salford. (KJ)
- 1 PhD examination at University of Liverpool (TTN)
- 1 PhD examination at Chalmers University (ZY)

#### ***g. Involvement of conference organisation***

- Co-organiser of the 18th European Conference on the Applications of Evolutionary Computation, 8-10th April 2015, Copenhagen, Denmark. (TTN)
- Chairman of the 13th conference track "Evolutionary Algorithms in Stochastic and Dynamic Environments (EvoSTOC)" as a part of the international EvoStar 2016 conference, to be held in Porto, Portugal. (TTN)
- Editor of Springer's Lecture Notes in Computer Science book Vol. 9028 (TTN)
- Chaired and Co-Hosted the 9th EPSRC Early Career Manufacturing Research Forum at University of Liverpool on 14&15/4/15. (RD)

- Co-Chairman of the 3rd International Conference on Transportation Information and Safety (ICTIS), 28-30 June 2015, Wuhan, China. (ZY)

#### ***h. Prizes/honours***

- Awarded the best presentation trophy for LJMU, Maritime Academic Conference & Expo 2015 (MARACAD), Duabi, November 9-10, 2015. (MAE)
- ALRT Best Paper Award, paper title “Modelling Risk Based Cost Analysis of Port Adaptation Measures to Climate Change”, (co-authored with A.K.Y. Ng, P.T.W. Lee, T. Wang, V.S. Rodrigues, S. Pettit, I. Harris), awarded in Asian Logistics Round Table 2015 Conference, Taipei, August 30- September 1, 2015. (ZY)

#### ***i. Invited reviews***

- Invited external expert of the National Science Centre, Poland. (TTN)
- Invited foreign evaluator of the American Nature Science Research Council. (ZY)

#### ***j. Other invited presentations***

1. Matellini B., Wang J. (2015), “A Bayesian network model for fire development and occupant response within dwellings”, Invited presentation in the Transport Safety Forum (TSF), organised by China Water Transport News Agency and National Engineering Research Center for Water Transport Safety, Wuhan University of Technology, June 24.
2. Ren J. (2015), “Risk analysis Technology in International Trade”, Invited presentation in the research seminar of Zhejiang University of Technology, Hangzhou, China, 15 November.
3. Ren J. (2015), “Risk Modelling and Simulation of Chemical SC using System Dynamics Approach”, Invited presentation at China Petroleum University, 16 June.
4. Yang Z. (2015), “Maritime security assessment: theories and applications”, Maritime Security Conference in Transport Security Expo 2015, December 2-4, London, UK.
5. Yang Z. (2015), “Quantification of human error probability in maritime operations”, The International Workshop on Training and Assessment: Advances in Training: Perspectives and Challenges, funded by Norwegian Research Council, at Buskerud Vestfold University College, Vestfold, Norway, 16th September.
6. Yang Z. (2015), “Maritime supply chain resilience and sustainability: Development and challenges”, Invited speech at Logistics Research Training Workshop funded by China State Administration of Foreign Experts Affairs through Beijing Jiaotong University, Beijing, China, July 21-22.
7. Yang Z. (2015), “Quantitative maritime security assessment”, Invited speech at International Conference on Transportation Information and Safety (ICTIS), Wuhan, China, June 28-30.
8. Yang Z. (2015), “Maritime safety and security assessment: Development and challenges”, Invited speech at Dalian Maritime University, Dalian, China, June 8.

#### ***k. Consultancy***

- Lead consultant for PERSGA ( the regional organisation for the protection of the marine environment in the Red Sea and the Gulf of Aden). (MAE)
- Greenport, Vietnam (TTN)
- Petrovietnam Technical Services Corporation, Vietnam (TTN)
- Peel Ports, UK (TTN)
- Dublin Ferryport. (TTN, ZY)
- Director of Conway Maritime Trust. (SB)
- AECOM. (ZY)

#### ***l. Others***

- Working in partnership with Risktec Solutions delivering distance learning and face to face modules. (DBM)
- Most read in ScienceDirect’s Top 25 for Swarm and Evolutionary Computation, current period 2015. (TTN)
- Listed in top Most Cited Swarm and Evolutionary Computation Articles 2015 (ranked 8th) (TTN)
- Best reviewing scores and best paper award nomination by reviewers for a paper submitted to EvoSTOC 2015 conference. (TTN, ZY, IJ)

## Appendix 1: Publications published in 2015

### Book

1. Abou-Elkawam, M. (2015), *Nomads of a Global Industry: Seafarers and the Marine Environment: The Quest*, LAP LAMBERT Academic Publishing, 280 pages, ISBN-10: 365978530X/ ISBN-13: 978-3659785306.

### Books edited

2. Mora, A.M., Squillero, G., Nguyen T.T., *et al.* (2015). *Applications of Evolutionary Computation*, Lecture Notes in Computer Science, Vol.9028, ISBN 978-3-319-16548-6
3. Ng, A.K.Y., Cahoon, S. and Chen, S.L., Austin, B., Yang, Z. (2015), *Climate Change and Adaptation Planning for Ports*, Routledge Publishing, UK, ISBN: 9781138797901

### Book chapters

4. Ng, A.K.Y., Becker, A., Cahoon, S., Chen, S.L., Earl, P. and Yang, Z. (2015), "Time to act: The criticality of ports in adapting to the impacts posed by climate change", in *Climate Change and Adaptation Planning for Ports* (edited by Ng *et al.*) by Routledge, ISBN: 9781138797901.
5. Yang, Z., Wang, J. and NG, A.K.Y. (2015), "Toward robust management of maritime risk security", in *Dynamic Shipping and Port Development in the Globalized Economy* (edited by Lee, P.T.W., Cullinane, K. and Macmillan, P.), Palgrave Macmillan, pp.122-149.
6. Yang, Z., Cahoon S., Chen S.L., Austin B. (2015), "Analyzing risks posed by climate change on ports: A fuzzy approach", in *Climate Change and Adaptation Planning for Ports* (edited by Ng *et al.*), Routledge, ISBN: 9781138797901.
7. Zhang, D., Wan, C.P. and Yang, Z. (2015), "Modeling and evaluation of green port development: A case study on Tianjin Port", in *Climate Change and Adaptation Planning for Ports* (edited by Ng *et al.*), Routledge, ISBN: 9781138797901.

### Refereed academic journal papers (SCI cited)\*

8. Alkhatib, S., Darlington, R., Yang, Z. and Nguyen, T. (2015), "A novel technique for evaluating and selecting logistics service providers based on the logistics resource view", *Expert Systems with Applications*, 42(20), pp.6976-6989. IF: 2.24
9. Babader, A., Ren, J., Jones, K. and Wang, J. (2016), "A system dynamics approach for enhancing social behaviours regarding the reuse of packaging", *Expert Systems with Applications*, 46, pp.417-425. IF: 2.24
10. He, K., Seddighi, M. and He, S. (2016), "DNS study of a pipe flow following a step increase in flow rate", *International Journal of Heat and Fluid Flow*, 57, pp.130-141. IF: 1.596
11. He, S. and Seddighi, M. (2015), "Transition of transient channel flow after a change in Reynolds number", *Journal of Fluid Mechanics*, 764, pp.395-427. IF: 2.383
12. 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*, 111, pp.136-147. IF: 1.351
13. Karahalios, H., Yang, Z. and Wang, J. (2015), "A risk appraisal system regarding the implementation of maritime regulations by a ship operator", *Maritime Policy & Management*, 42(4), pp.389-413. IF: 1.309
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### Other refereed journal papers

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\* IF: Impact factor.

### **Refereed conference papers**

28. Abujaafar K., Yang Z., Wang J., Nazir S. and Øvergård K.I. (2015), “Modelling adequacy of organisation in human reliability analysis – A case of marine engineering operations”, European Safety and Reliability Conference 2015 (ESREL15), September 6-10, Zurich, Switzerland.
29. Ha M., Yang Z., Notteboom T., Ng A., Bonsall S. and An K.M. (2015), “A hybrid approach for modelling interdependencies between port-performance indicators (PPIs)”, International Association of Maritime Economics Conference 2015 (IAME2015), August 24-26, Kuala Lumpur, Malaysia.
30. Lee P.T.W., Jun C.Y., Lin C.W., Lee K.Y. and Yang Z. (2015), “Performance evaluation of Asian major cruise terminals”, International Conference on Global Integration of Economies and Connectivity Development, associated with Asian Logistics Round Table conference, August 31 – September 1, Taipei, Taiwan.
31. Lee P.T.W., Suthiwartnarueput K., Lin C.W., Visamitanan K., Yang Z. and Ng A.K.Y. (2015), “Key Success factors of waterfront port development”, International Association of Maritime Economics Conference 2015 (IAME2015), August 24-26, Kuala Lumpur, Malaysia.
32. Mathur A, Seddighi M and He S. (2015), “Effect of high Reynolds number ratio on transition of transient channel flow”, 8<sup>th</sup> International Symposium on Turbulence, Heat and Mass Transfer (THMT’15), 15-18 Sept. 2015, Sarajevo, Bosnia and Herzegovina.
33. Muttich M., Yang Z., Lee P.T.W. and Qu Z. (2015), “Modelling uncertainty in port agency selection of cruise lines”, International Association of Maritime Economics Conference 2015 (IAME2015), August 24-26, Kuala Lumpur, Malaysia.
34. Nazir S, Øvergård K.I., Yang Z., and Sorensen L.J. (2015), “Towards effective training for process and maritime industries”, 6<sup>th</sup> International Conference on Applied Human Factors and Ergonomics (AHFE 2015), July 26-30, Las Vegas, USA. Also available on Procedia Manufacturing, Vol. 3, pp. 1519 – 1526.
35. Ng A., Wang T., Yang Z. and Li K. (2015), “A study of Canadian ports in adapting to the risks and uncertainties posed by climate change”, International Association of Maritime Economics Conference 2015 (IAME2015), August 24-26, Kuala Lumpur, Malaysia.
36. Pristrom S., Yang Z., Yan X.P. and Wang J. (2015), “A new model for piracy and robbery risk assessment”, International Forum in Shipping, Ports and Airports (IFSPA2015), November 29-December 2, Hong Kong.
37. Qu Z., Asoquo M., Jenkinson I., Wang J. and Yang Z. (2015), “Measurement and management of KPIs under uncertainty: A case of shipping management”, International Conference on Quality, Reliability, Risk, Maintenance, and Safety Engineering (ICQR2MSE 2015), July 21-24, Beijing, China.
38. Rahmatdin N.M., Noorul, F.S. and Yang Z. (2015), “The current development of feeder services in Malaysia due to the opening of the northern sea route (NSR): Route design for Malaysia feeder services”, International Association of Maritime Economics Conference 2015 (IAME2015), August 24-26, Kuala Lumpur, Malaysia.
39. Yang Z., Ng A., Lee P.T.W., Wang T., Rodrigues V.S., Pettit S. and Harris I. (2015), “Modelling risk based cost analysis of port adaptation measures to climate change”, International Conference on Global Integration of Economies and Connectivity Development, associated with Asian Logistics Round Table conference, Aug. 31-Sept. 1, Taipei, Taiwan.
40. Zhang D., Wan C.P., Yan X.P. and Yang Z. (2015), “Quantitative evaluation of green port development – comparative analysis of major ports in China”, International Association of Maritime Economics Conference 2015 (IAME2015), August 24-26, Kuala Lumpur, Malaysia.
41. Pristrom S., Yang Z., Wang J. (2015), “Major issues associated with maritime security and piracy studies”, International Conference on Transportation Information and Safety (ICTIS), June 28-30, Wuhan, China.
42. Harrison M., Yang Z., Nguyen T. T., Kavakeb S., Wang J. and Bonsall S. (2015), “A TOPSIS method for vehicle route selection in container terminals”, International Conference on Transportation Information and Safety (ICTIS), June 28-30, Wuhan, China.
43. Zhang L., Graham G. and Yang Z. (2015), “Public bike-sharing: key issues and challenges in supply chain integration”, 14<sup>th</sup> International Research Symposium on Service Excellence in Management (QUIS14), June 19-21, Shanghai, China.
44. Nguyen T.T., Jenkinson I., and Yang Z. (2015), “An experimental study of combining evolutionary algorithms with KD-tree to solving dynamic optimisation problems”, 18<sup>th</sup> European Conference, EvoApplications, April 8-10, Copenhagen, Denmark. Also available on Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), Vol. 9028, pp. 857-868.
45. Khosh A.S., Ricco P. and Seddighi M. (2015), “Turbulent drag reduction by hydrophobic surfaces with shear-dependent slip length”, 15<sup>th</sup> European Turbulence Conference (ETC15), 25-28<sup>th</sup> August, Delft, The Netherlands.
46. Seddighi M., He S., Vardy A., O’donoghue T., and Pokrajac D. (2015), “Near-wall behaviour of transient flow in a channel with distributed 3-D roughness”, International Symposium on Turbulence and Shear Flow Phenomena (TSFP9) , 30 June - 3 July 2015, Melbourne, Australia.
47. He K., Seddighi M. and He S. (2015), “Turbulent pipe flow with non-uniform body force”, International Symposium on Turbulence and Shear Flow Phenomena (TSFP9) , 30 June - 3 July 2015, Melbourne, Australia.
48. McNamara D., Cunningham A., Riahi R., Jenkinson I. and Wang J. (2015), “Modelling of maintenance and inspection policies for marine systems using Monte Carlo simulation and Delay-Time Analysis”, Proceeding of the 25<sup>th</sup> European Safety and Reliability Conference, ESREL 2015, Zurich, Switzerland, 7-10 September 2015, edited by L. Podofillini, *et al.*, CRC Press, ISBN: 978-1-138-02879-1, pp.1845-1852.
49. Yan X.P., Zhang D., Wang J. and Soares C.G. (2015), “Maritime risk assessment in inland waterways: The past and the future”, Proceeding of the 25<sup>th</sup> European Safety and Reliability Conference, ESREL 2015, Zurich, Switzerland, 7-10 September 2015, edited by L. Podofillini, *et al.*, CRC Press, ISBN: 978-1-138-02879-1, pp.3699-3706.

### **Other publications**

50. Lee, P.T.W. and Yang Z. (2015), “History of IAME2012 conference”, The Maritime Economist, Vol. 1, pp. 49-50.
51. Yang, Z. (2015), “Challenges in maritime security assessment”, The Maritime Economist, Vol. 3, pp. 34-36.
52. Qu, Z., Jenkinson I., Wang, J., and Yang Z. (2015), “Six Sigma in Onshore service quality control of shipping operations”, Short Note in Global Port Research Alliance Conference on Port and Logistics Connectivity, May 21-22, Hong Kong.
53. Al-Yami, H., Yang, Z., Ramin, R., Bonsall, S. and Wang, J. (2015), “Advanced uncertainty modelling for container port risk analysis”, Short Note in Global Port Research Alliance Conference on Port and Logistics Connectivity, May 21-22, Hong Kong.

## Appendix 2: LOOM monthly seminars in 2015

**Time:** 10.00-11.15, first Wednesday of each month from February 2015.

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

The scheduled LOOM seminars for 2015 are provisionally arranged as follows:

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

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

4<sup>th</sup> February

Geoff J. Clarke, “The Port Security scape”, Regional Director for Freight & Logistics for AECOM.

Abstract: The presentation titled “International Transport and Logistics Corridors” will provide an overview on International Transport Corridors and more specifically rail freight opportunities between China, Russia and European countries. The presentation will introduce the audience to The Silk Road, its history, cultural and economic impact through the millennia and its revival over the past decade. It will examine the current modal split, consider the shipping and air freight offers and explore potential rail market share and how it is affected by existing barriers. Information will be provided on existing infrastructure and policy frameworks. Finally, policy recommendations will be made and potential dangers that can hinder rail growth will be addressed.

4<sup>th</sup> March

Dr. Yarin Eski, “Port safety and security”

### Second Quarter – Chairing person: **Dr. R. Riahi**/Dr. A. Wall

6<sup>th</sup> May

Dr. Ramin Riahi/Captain Farhan Saeed, “Development of taxonomy for deck officers’ non-technical skills (NTS) and analysing training needs for human element, leadership and management (HELM) course”.

Mr. Maurice Asuguo, “Development of an efficient planned maintenance framework for marine and offshore machineries operating under highly uncertain environment”

3<sup>rd</sup> June

Dr. Trung Thanh Nguyen, “UAKP project”

Dr. Hongmei Zhou, “Port Clusters’ Behaviours Based on Prospect Theory”.

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

Time: 10.00-11.15 Thursday 6<sup>th</sup> August

Venue: Room 121 (LOOM Research Room), James Parsons Building

Dr Di Zhang, “Navigational Risk Analysis of Arctic Waters”, Associate Professor, National Engineering Research Center for Water Transport Safety (WTS Center), Wuhan University of Technology, China

Abstract: Recently, the melting of the Arctic sea ice and development of marine technology are enabling the regular voyages in the Arctic Waters. However, the area suffers from severe weather conditions, fully and partially ice-covered waters that influencing the navigational safety of the Arctic Marine Transportation System (AMTS). Meanwhile, various uncertainties such as the lack of information restrict the voyages in the Arctic Waters. Hence, the risk influencing factors of AMTS are identified and the navigational risk is modeled via a probabilistic assessment in this research. For this, several methodologies such as fuzzy sets, evidence reasoning, structural equation modelling, Bayesian networks are incorporated and utilized. Both experts’ judgments and a ship’s navigational data are collected and used in the case studies to interpret the proposed methodology.

Time: 10.00-11.15 Wednesday 12 August

Dr Salman Nazir, “The Role of Training and Performance Assessment in Safety of Socio-Technical Systems”, Researcher at Buskerud and Vestfold University College, Norway

Abstract: The increasing complexity of tasks in socio-technical systems has revealed the limited contributions/effectiveness of existing methodologies on systems safety, training, and performance assessment. Humans – an essential component of socio-technical systems – play a vital role in overall systems performance and managing major hazards. Advancement in existing training methods with the aim of improving the competence and skills of operators during both normal and abnormal operations is an emerging research area. Millions of Euros are spent on training each year, yet regrettably, limited research has been conducted on the evaluation of such training methods. To reduce or eliminate subjectivity from performance assessment, an objective assessment methodology is required. This presentation will highlight recent challenges in system safety and provide insights into operator training and objective performance assessment (experimental studies).

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

Time: 10.00-11.15, 7<sup>th</sup> October

Saleh Fahed Saleh Al-Khatib, “Strategic Logistics Outsourcing: Integrated Models for Evaluating and Selecting Logistics Service Providers (LSPs), Upstream/Downstream Supply Chain Comparison”

Ambisire Yahaya Usman, “An integrated risk assessment model for resilience improvement on Oil Terminal Operations (OTOs)”

Time: 14.00-15.00, 12<sup>th</sup> November

Dr. Sam Kadar, “Role of Marine Technology Centre in Research consultancy at Universiti Teknologi Malaysia Universiti Teknologi Malaysia”, Faculty of Mechanical Engineering, Universiti Teknologi Malaysia.