

# 2014 Annual Research Outcome Report of Liverpool Logistics, Offshore and Marine (LOOM) Research Institute



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## LOOM members in 2014:

Dr. David R. Allanson (DRA)  
Dr. Steve Bonsall (SB)  
Dr. Andrew Cunningham (AC)  
Dr. Robert Darlington (RD)  
Dr. Stephen Fairclough (SF)  
Prof. Ian Jenkinson (IJ)  
Dr. Karl Jones (KJ)  
Dr. Dante Ben Matellini (DBM)  
Dr. Trung Thanh Nguyen (TTN)  
Dr. Jun Ren (JR)  
Dr. Ramin Riahi (RR)  
Dr. Charles Roberts (CR)  
Dr. Alan Wall (AW)  
Prof. Jin Wang (JW)  
Prof. Zaili Yang (ZY)

## Members involved in PhD supervision at LOOM in 2014:

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.  
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

## LOOM researchers (doctoral/postdoctoral) in 2014:

Ayman Alghanmi  
Saleh Fahed Saleh Al-Khatib  
H. Al Yami  
M. Asuguo  
Denis Atehnijia  
A. A. Atiyah  
A. Babader  
A. Bury  
A. Dantsoho  
D. Franks  
M. Ha  
Wanzul Bin Abdul Halim  
S. Haddad  
I. C. Ikewete  
A. Isola  
M. Kasaeyan  
S. Kavakeb  
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

## Visiting researchers

Dr. L.J. Chen  
Mr. M.W. Heo  
Prof H.W. Kim  
Mr. L.Z. Sang  
Dr. Q.M. Shang  
Dr. Y.N. Yao  
Mr A.X. Zhang  
Dr. H.M. Zhou

## Visiting professor

Professor Xinping Yan,  
Wuhan University of  
Technology

This report outlines the research outcomes produced by the LOOM Research Institute from January to December 2014 in terms of the following:

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

Grades 1-10 are used to self-assess each of the above where 1 stands for "unsatisfactory" and 10 "outstanding".

In the UK's REF 2014, 9 LOOM members were submitted in LJMU's UoA 12 submission (total number of submitted FTEs: 13). Dr. Zaili Yang was promoted as Professor of Maritime Transport in 2014.

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 quality.

## 1. Research publications (only those already published in 2014)

### Self-assessment: 6 out of 10

The following are the outputs published in 2014 (for details, see Appendix 1):

- 3 books.
- 2 book chapters.
- 14 SCI-cited refereed journal papers.
- 5 other academic journal papers.
- 19 refereed conference papers.
- 6 invited presentations.
- 1 other publication.

## 2. Doctoral, postdoctoral and international research visiting projects (completed, on-going and started in 2014)

### Self-assessment: 6 out of 10

#### 2.1 Research projects completed in 2014

##### Visiting researcher projects

1. Dr. H. Wang, "Modelling of emergency scenarios associated with oil spills" (2013-2014), from Wuhan University of Technology and funded by China Scholarship Council. (JR)
2. Prof. X.P. Yan, "Maritime safety assessment", funded by the Royal Academy of Engineering's Distinguished Visiting Fellowship, Aug-Sept. 2014.
3. Miss Z.H. Tian, "Centrality theory in maritime vulnerability analysis" (2014), funded by Beijing Jiaotong University. (ZY)
4. Miss C. Ly, "Discrete-event simulation for container terminals", from Polytech Lille, France. (TTN, ZY)

#### 2.2 On-going research projects in 2014

##### Doctoral projects

1. H. Al Yami, "Assessment and its application to sea port systems" (2010-20145, funded by Saudi Arabian Government. (ZY, RR, JW)
2. D. Franks, "Risk assessment of royal fleet auxiliary services" (2009-2015), funded by MoD. (JW, AW, ZY)
3. S. Haddad, "A study of the implementation of relationship marketing (RM) approach in supply chain performance" (2010-2015), 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" (2012-2015). (RR, JW, GPJ)
5. D. Atehnijia, "Formal safety assessment of dry docking operations" (2012-2015), funded by the Commonwealth Scholarship. (ZY, RR, JW, KJ)
6. M. Ha, "Port logistics performance measurement" (2012-2015). (ZY, AN, SB)
7. I. C. Ikewete, "A risk based framework for design, inspection and maintenance of offshore wind farm turbines" (2012-2015). (RR, *et al.*)
8. C. Li, "A system dynamics approach for chemical supply chain risk management: modelling and simulation" (2012-2015), partially funded by a EU grant. (JR, *et al.*)
9. I. Nawaz, "Risk based verification of offshore installations on the United Kingdom continental shelf" (2012-2015), funded by Lloyds Register. (DBM, JW, AC)
10. Z. Qu, "Analytical quality control in shipping operation using Six Sigma principles" (2012-2015), funded by EU. (IJ, JW)
11. 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)
12. A.Y. Usman, "Research on quantifying risk assessment of container terminal operations" (2012-2015). (JR, JW, KJ)
13. F. Saeed, "An analysis of deck officer training and assessment for crisis management situation" (2010-2015). (AW, RR, CR, PD)
14. M. Said, "Risk and Safety Assessment of Pilotage Operations" (2010-2015), funded by Malaysian Government. (AW, JW, USH)
15. A. Waddah, "Research on evaluating logistics performance and benchmarking container business in Egypt" (2008-2015), partially funded by Arab Academy for Science, Technology & Maritime Logistics. (JR, CR, JW)
16. A. Babader, "Environmental impact modelling and optimisation of waste packaging" (2011-2015), funded by Saudi Arabian Government (JR, JW, KJ).
17. A. Bury, "Short sea shipping as part of an East/West axis in European logistics" (2011-2015), funded by EU. (AW, JW, JR)
18. A. Dantsoho, "Risk assessment of onshore petroleum terminals and tank farms" (2011-2015), funded by the Nigerian Port Authority. (AW, JR)
19. S. Kavakeb, "Optimisation of Container Port Operations" (2011-2015), funded by EU. (TTN, ZY, IJ).
20. D. Paraskevadakis, "An importance-performance analysis of intermodal freight transport chain infrastructures and strategic decision making towards optimisation" (2011-2015), funded by EU. (JR, JW, AW)
21. A.Y. Taha, "Use of it for onboard training of marine officers" (2011-2015), funded by Arab Academy (AW, MJ, BK).
22. M. Kasaeyan, "Advanced risk management of mobile offshore drilling units" (2011-2015). (JW, *et al.*)
23. B. Kelly, "Development of merchant navy qualifications", staff registration. (AW, *et al.*)
24. 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)
25. 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)
26. S. Fahed Saleh Al-Khatib, "Integrated models for strategic evaluation and selection of logistics service providers" (2013-2017), funded by Yarmouk University, Jordan. (RD, ZY, TTN)
27. W.M. Abdul Halim, "Shipping network analysis" (2003-2017), funded by Universiti Malaysia Terengganu. (ZY, TTN, YW)

#### 2.3 Research projects started in 2014

##### Doctoral projects

1. A. Ishola, "Safety Modelling Approach for risk management of petroleum and gas refineries" (DBM, *et al.*)
2. 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.*)
3. M. Usman, "Risk based maintenance" (2014-2018), funded by LR and LJMU. (ZY, RR, FS, JW)
4. S. Loughney, "Offshore e-integrity case" (2014-2017), funded by MRRI and LJMU. (JW, *et al.*)

##### Visiting researcher projects

1. 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.*)

2. Mr. M.W. Heo, “Maritime Policy Study” (2014-2015), funded by Korean Government. (ZY, JW, IJ)
3. Prof H.W. Kim, “Green port” (2014 – 2015), funded by Korean Maritime University. (ZY)
4. Mr. 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)
5. Dr. Q.M. Shang, “Simulation of marine engine” (2014 – 2015), from Wuhan University of Technology and funded by China Scholarship Council. (TTN, ZY)
6. Dr. H.Y. Wang, “Emergency situation management in water transportation” (2013-2014), from Wuhan University of Technology and funded by China Scholarship Council. (JR)
7. Dr. Y.N. Yao, “Condition monitoring in marine engineering applications” (2014), from Wuhan University of Technology and funded by China Scholarship Council. (ZY)
8. Mr A.X. Zhang, “Container supply chain risk analysis” (2014 – 2015), funded by Beijing Jiaotong University. (ZY)
9. Dr. H.M. Zhou, “Gaming theory in maritime risk” (2014 – 2015), from Wuhan University of Technology and funded by China Scholarship Council. (ZY)

### 3. LOOM monthly seminars in 2014

11 LOOM monthly seminars were organised in 2014. The following external speakers kindly delivered their presentations at LOOM’s monthly seminars:

- Aldis Bulis, University of Latvia.
- Dr Yevgeny Aksenov, National Oceanography Centre, UK.
- Prof. Xiping Yan, Wuhan University of Technology, China.
- Ron Bell, OBE, Director of Engineering Consultants Ltd.
- Mr. Kevin Toye, Principal Transport Consultant AECOM, UK.
- Dr. Fitri Bin Abdul Rahman, Universiti Malaysia Terengganu, Malaysia.

The detailed LOOM monthly seminars in 2014 are shown in Appendix 2.

### 4. Research grants in 2014

#### Self-assessment: 5 out of 10

#### 4.1 External grants

##### *Grants completed in 2014*

• KTP with Northstone/Cubis (KTP 8079, 2013-2014)	£77,558	(RD)
• Intrade - Intelligent Transportation for Dyn. Env. (EU, 2010-2014)	£470,000 (of €3.5m)	(ZY, JW, SB)
• International Association of Maritime Universities (2013-2014)	\$54,000	(RR, FS, JW, ZY)
• Distinguished Visiting Fellowship (Roy. Acad. of Eng., 2014)	£5,865	(JW)
• CILT Research Network Annual Conference Fund (2014)	£400	(TTN)

##### *On-going grants in 2014*

• Westflows – freight movements in NWE (EU, 2011-2015)	£320,000 (of €4.5m)	(JW, ZY, JR, AW, SB)
• REFERENCE – Risk assessment (EU, 2012-1016)	€384,300	(JW, ZY, AC)
• 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)

##### *Grants started in 2014*

• Waste re-use (Saudi Government, 2014-2015)	£6,000	(JR)
• Green Port (Korean Maritime and Ocean Univ., 2014-2015)	£3,000	(ZY)
• Risk-based maintenance (LR, 2014-2017)	£5,700	(ZY, JW)
• Marine policy comparison (Korean government, 2014-2015)	\$10,000	(ZY, JW, IJ)
• TSB VoyagOR (Technology Strategy Board, 2014-2015)	£20,000	(ZY, TTN, JW, IJ)
• InTraDE1 – Transferability of IAVs (EU INTERREG, 2014-2015)	€32,000	(ZY, TTN, JW, IJ)
• Green economic vehicles (RCUK NEMODE, 2014-2015)	£3,000	(TTN, YZ, JW, IJ)
• Offshore e-integrity case (RMRI, 2014-2017)	£30,000	(JW, <i>et al.</i> )
• Virtual port simulation (CILT, 2014-2015)	£7,500	(TTN)
• Investigation of inland waterway safety (Royal Society, 2014-16)	£12,000	(JW, <i>et al.</i> )
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##### *Grants awarded in 2014*

• Climate Adaptation in Transportation (AECOM, 2015-2017)	£30,000	(ZY <i>et al.</i> )
• UK-Vietnam partnership in ICT (British Council, 2015-2016)	£40,166	(TTN, IJ, YZ, JW)
• Visiting professorship award (Royal Acad. of Eng., 2015-2018)	£30,000	(JW)

#### 4.2 Internal grants

• Faculty Pump Priming funding (maritime logistics, 2014-2015)	£5,000	(TTN, ZY)
• Faculty Pump Priming funding (materials & structures 2014-2015)	£8,000	(RD)
• PGR Conference Travel Fund (2014)	£700	(JR for Babader)

## 5. Evidence of national and international peer esteem in 2014

### Self-assessment: 6 out of 10

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

- Opening keynote address “Developments and challenges in maritime and port security assessment”, in Annual European Safety and Reliability (ESREL), Wroclaw, 14-18 Sept. 2014. (JW)
- Invited speech by the Chartered Institute of Logistics and Transport at the Environmental and Sustainability Forum & Port and Maritime Forum, July 2, 2014. (ZY)
- Keynote at SENSORS 2014, Plenary speaker at Passive BCI Workshop, Germany, July 2014. (SF)

#### **b. Participation in journal editorial boards**

- Member of the Editorial Board for IEEE Transactions on Affective Computing. (SF)
- 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)
- Editor of Springer’s Lecture Notes in Computer Science book Vol. 8602. (TTN)
- Member of Editorial Board of International Advanced Research Journal in Science, Engineering and Technology. (TTN)
- 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 Reliability Engineering and Quality International. (JW)
- Associate Editor of the International Journal of Automation and Computing. (JW)
- Member of the Editorial Board of Tourism Today. (JW)
- 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)
- 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)
- 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-). (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)
- Guest Editor of Growth and Change: An International Journal (G&C) (2012-2015). (ZY)

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

- EPSRC Manufacturing Early Career Researcher forum member (2012- 2014). (RD)
- Advisor on the Ports and Terminals Advisory Group for UK Trade & Investment (UKTI). (IJ)
- Member of committee for Deck Officer Qualifications & Standards of IAMI. (AW)
- Member of sub-panel 12 (Mech. Eng.) in Research Excellence Framework (REF) 2014 in the UK. (JW)
- Member of the UK EPSRC peer review college of experts. (JW)
- Member of the IMO Formal Safety Assessment Experts Group. (JW)
- Review of grant applications for EU, EPSRC, Research Council of Norway, the Leverhulme Trust, *etc.* (most LOOM members)

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

- Hon. Secretary of NW England and N Wales Branch of Nautical Institute. (SB)
- Member of the Honourable Company of Master Mariners. (SB)
- EPSRC Manufacturing Early Career Researcher forum member (2012-2014). (RD)
- President of Psychophysiology in Ergonomics (an international working group of the International Ergonomics Association). (SF)
- Committee member of the Consortium of Manufacturing Engineering Heads. (IJ)
- Committee member of the North West Branch of the IMarEST. (GPJ & RR)
- Member of Council for the Institute of Measurement and Control. (KJ)
- Fellow of the Higher Education Academy. (KJ)
- Member of Council for the Institute of Measurement and Control. (KJ)
- Member of the IEEE Task Force on Evolutionary Computation in Dynamic and Uncertain Environments. (TTN)
- Committee member of International Association of Maritime Institutions. (RR)
- 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)
- Founding director of International Association of Transport, Trade and Service Studies (IATTSS). (ZY)
- Committee member of the Marine Transport & Navigation Group (MTNG) of the RIN. (AW)

#### **f. External PhD examinership**

- 1 PhD examination at Coventry University. (KJ)
- 1 PhD examination at the University of Central Lancashire. (JR)
- 1 PhD examination at Plymouth University. (ZY)
- 1 PhD examination at University of Plymouth. (AW)

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

- Program Co-Chair, International Conference on Physiological Computing Systems, Lisbon, Jan 2014. (SF)
- Associate Chair, ACM Annual Meeting on Computer-Human Interaction CHI. (SF)
- Member of International Advisory Board for International Conference on Advanced Technology & Sciences. 2014. (KJ)
- Member Technical Programme Committee: International E-Learning Conference. 2014. (KJ)
- Member International Organising Committee: Conference on Computer Systems and Technology (CompSysTech) . 2014. (KJ)
- Chair of the EvoSTOC conference track, 16<sup>th</sup> European Conference on the Applications of Evolutionary and bio-inspired Computation 2014. (TTN)
- Member of Programme Committee, Special Session on Evolutionary Computation in Dynamic and Uncertain Environments, IEEE World Congress on Computational Intelligence 2014. (TTN)
- Member of the Programme Committee, GA Session, Genetic and Evolutionary Computation Conference (GECCO-2014). (TTN)
- Member of the Programme Committee, World Congress on ICT 2014. (TTN)
- Member of the Programme Committee, International Conference of Soft Computing and Pattern Recognition 2014. (TTN)
- Member of the Programme Committee, International Conference on Information Technology 2014. (TTN)
- Member of Programme Committee, The 14<sup>th</sup> IEEE International Conference on Intelligent Systems Design and Applications. (TTN)
- Member of Programme Committee, the 6<sup>th</sup> IEEE International Conference on Nature and Biologically Inspired Computing (NaBIC'14). (TTN)
- Member of Programme Committee, the 6<sup>th</sup> IEEE International Conference on Computational Aspects of Social Network 2014 (CASoN'14). (TTN)
- Member of Programme Committee, the 7<sup>th</sup> IEEE Symposium on Computational Intelligence for Security and Defense Applications (IEEE-CISDA2014). (TTN)
- Member of Programme Committee of 2014 International Conference on Quality, Reliability, Risk, Maintenance, and Safety Engineering (QR2MSE 2014), 22-25 July 2014, Dalian, China. (JW)
- Programme Committee member of the 8<sup>th</sup> International Conference on Modelling in Industrial Maintenance and Reliability (MIMAR), 13 - 15 July 2014, St Catherine's, Oxford, UK. (JW)
- Member of Programme Committee of International Conference on Quality, Reliability, Maintainability and Safety (QR2MSE), 2014. (ZY)
- Member of Scientific Committee of International Association of Maritime Economics Conference (IAME), 2014. (ZY)
- Member of Programme Committee of Collaborative Production and Logistics Integration in Global Supply Chain Networks and Improvement of Third Party Logistics Services (SPRINGER-COLL-3PLS-2014), 2014-2015. (ZY)
- Member of Programme Committee of IEEE International Conference on Systems, Man, and Cybernetics (SMC 2014), 5-8 October 2014, San Diego, California, USA. (ZY)
- Member of Advisory Board of World Congress of Ocean (WCO), 2014. (ZY)
- Member of Programme Committee of International Conference on Reliability, Infocom Technologies and Optimization (ICRITO), 2014. (ZY)

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

- Highest reviewing scores for a paper submitted to the EvoSTOC 2014 conference track. (Kavakeb, TTN, ZY, IJ)
- Second most read in ScienceDirect's Top 25 for Swarm and Evolutionary Computation, full year 2013. (TTN)
- Third most read in ScienceDirect's Top 25 for Swarm and Evolutionary Computation, half year 2014. (TTN)
- Listed in top Most Cited Swarm and Evolutionary Computation Articles (ranked 7<sup>th</sup>). (TTN)

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

- Review of more than 40 journals including IEEE Transactions, Knowledge- Based Systems, Journal of Hazardous Materials, Journal of Petroleum Science and Engineering, IMechE journals, MIT Evolutionary Computation Journal, Natural Computing, Knowledge-Based Systems, Ocean Engineering and Risk Analysis. (Most of the LOOM members).
- Review of more than 30 research proposals for EPSRC, EU, *etc.* (Most of the LOOM members)
- Reviewer for the Higher Education Academy (Teaching Development Grants) (KJ)
- Reviewer for the Higher Education Academy (Mike Baker Doctoral Programme) (KJ)
- Reviewer of Norwegian Research Council projects. (ZY)

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

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

- AECOM. (ZY)
- Dublin Ferryport. (TTN, ZY)

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

- Working in partnership with Risktec Solutions delivering distance learning and face to face modules. (DBM)
- Development of a joint PhD course with WUT in Maritime Transport Engineering. (ZY, JW, IJ)

## Appendix 1: Publications published in 2014

### Books

1. Esparcia-Alcázar A.I., Mora A.M., Nguyen T.T., *et al* (editors), Applications of Evolutionary Computation, Lecture Notes in Computer Science, 2014, ISBN 978-3-662-45523-4.
2. Bole A., Wall A., Norris A., Radar and ARPA Manual, Third edition, 2014, ISBN 978-0-08-097752-2.
3. Fairclough S.H., Gilleade K. (Editors), Advances in Physiological Computing, Springer, 2014.

### Book chapters

4. Ng A., Yang Z., “Port security regulations and policies in Hong Kong: a critical review and the development of a risk based security assessment model”, in Designing Supply Chains in Emerging Economies (Eds by J Szyliowicz and K Bichou), Edward Elgar, 2014.
5. Fairclough S.H., Gilleade K., “Meaningful interaction with physiological computing”, in Fairclough & Gilleade (Eds.), Advances In Physiological Computing. Springer, 2014.

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

6. Alyami H., Lee P.T.W., Yang Z.L., Riahi R., Bonsall S., Wang J., “An advanced risk analysis approach for container port safety evaluation”, Maritime Policy & Management, Vol.41, Issue 7, 2014, 634-650. (IF = 1.477)
7. John A., Paraskevadakis D., Bury A., Yang Z.L., Riahi R., Wang J., “An integrated fuzzy risk assessment for seaport operations”, Safety Science, Vol. 68, 2014, 180-194. (IF = 1.672)
8. Li C., Nguyen T.T., Yang M., Yang S., Zeng S., “Multi-population methods in unconstrained continuous dynamic environments: the challenges”. Information Sciences, (published online, ranked 8th/135 Computer Science, Information Systems), 2014. (IF = 3.893)
9. Li K.X., Yin J.B., Luo M.F., Wang J., “Leading factors in job satisfaction of Chinese seafarers”, International Journal of Shipping and Transport Logistics, Vol.6, Issue 6, 2014, 680-693. (IF = 1.340)
10. Li K.X., Yin J., Bang H.S., Yang Z.L., Wang J., “Bayesian network with quantitative input for maritime risk analysis”, Transportmetrica A - Transport Science, Vol.10, Issue 2, 2014, 89-118. (IF: not available)
11. Karahalios H., Yang Z.L., Williams V., Wang J., A risk appraisal system regarding the implementation of maritime regulations by a ship operator”, Maritime Policy & Management, 2014, on-line published, doi: 10.1080/03088839.2013.873548. (IF = 1.477)
12. McNamara D., Cunningham A., Jenkinson I., Wang J., “Application of the Monte Carlo method to marine system maintenance studies considering failure modes and spare part stock control”, Journal of Marine Engineering and Technology, Vol.13, No.1, 2014, 37-58. (IF = 0.179)
13. McNamara D., Cunningham A., Jenkinson I., Wang J., “A model assessing cost of operating marine systems using data obtained from Monte Carlo analysis”, Proceedings of the Institution of Mechanical Engineers Part M-Journal of Engineering for the Maritime Environment, Vol.228, Issue 4, 2014, 398-412. (IF = 0.458)
14. Riahi R., Li K., Robertson I., Jenkinson I., Bonsall S., Wang J., A proposed decision-making model for evaluating a container’s security score”, Journal of Engineering for the maritime Environment, Vol.228, Issue 1, 2014, 81-104. (IF = 0.458)
15. Yang Z.L., Ng A.K.Y., Wang J., “A new risk quantification approach in port facility security assessment”, Transportation Research Part A, Vol.59, 2014, 72–90. (IF = 2.525)
16. Zhang D., Yan X., Yang Z., Wang J., “An accident data-based approach for congestion risk assessment of inland waterways: A Yangtze River case”, Journal of Risk and Reliability, Vol.228, Issue 2, 2014, 176-188. (IF = 0.775)
17. Yeo G.T., Ng A., Lee T.W., Yang Z., “Modelling port choice in an uncertain environment”, Maritime Policy and Management. Vol. 47, No. 2, 2014, 251-267. (Best MPM paper award – 1st runner up). (IF = 1.477)
18. Fairclough S.H., van der Zwaag M., Spiridon E., Westerlink J., “Effects of mood induction via music on cardiovascular measures of negative emotion during simulated driving”, Physiology & Behaviour, Vol.129, 2014, 173-180. (IF = 3.033)
19. Fairclough S.H., “Physiological data should remain confidential”, Nature, Vol.505, Issue 7483, 2014, 263. (IF = 42.351)

### Other refereed journal papers

20. John A., Yang Z.L., Riahi R., Wang J., “Application of a collaborative modelling and strategic fuzzy decision support system for selecting appropriate resilience strategies for seaport operations”, Journal of Traffic and Transportation Engineering (English Edition), Vol.1, No.3, 2014, 159-179.
21. Mokhtari K., Ren J., “A risk management methodology for maritime logistics and supply chain applications”, International Journal of Ocean Systems Engineering, Vol.4, No.2, 2014, 137-150.
22. Riahi, R., Saeed, F., “Development of taxonomy for deck officers’ Non-Technical Skills (NTS) and analysing training needs for Human Element, Leadership and Management (HELM) Course”, Published by International Association of Maritime Universities (IAMU), August 2014, ISBN 978-4-907408-06-0.
23. Wang H., Ren J., Wang J., Yang J.Q., “Developing a conceptual framework to evaluate effectiveness of emergency response system for oil spills”, Journal of Traffic and Transportation Engineering (English Edition), Vol.1, No.2, 2014, 120-128.
24. Asquao M., Coward I., Yang Z., “Modelling selection of third party ship management services: A case study of the Bibby Line”, Case Studies on Transport Policy, Vol.2, No.1, 2014, 28-35.

### Refereed conference papers

25. Babader A., Ren J., Wang J., Jones K., “An empirical study for exploring reusable packaging attributes”, 19<sup>th</sup> International Association of Packaging Research Institutes (IAPRI) World Conference on Packaging, Victoria University, Melbourne, Australia, 15-18 June, 2014, 1-11.
26. Babader A., Ren J., Wang J., Jones K., “Empirical study of environmental impact on reusable packaging attributes in the packaging industry”, Proceedings of 2<sup>nd</sup> International Conference on Packaging Technology and Science (ICPTS), Wuxi, China, 16 to 18 October 2014, 1-6.
27. John A., Riahi R., Paraskevadakis D., Bury A., Yang Z., Wang J., “A new approach for evaluating the disruption risks of a seaport system”, Proceedings of Annual European Safety and Reliability (ESREL), Wroclaw, 14-18 Sept. 2014, Safety

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\* IF: Impact factor.

and Reliability: Methodology and Applications – Nowakowski et al. (Eds), 2015 Taylor & Francis Group, London, 591-598, ISBN 978-1-138-02681-0.

28. Jones K.O., Skiffington J., Bartlett R., “Making examinations "more enjoyable”, 44<sup>th</sup> ASEE/IEEE Frontiers in Education Conference: Opening Doors to Innovation and Internationalization in Engineering Education, Madrid, Spain, 24 Oct. 2014.
29. Jones K.O., Johnston K., Robinson C., Bartlett R., “Designing assessments that mimic employment scenarios, engage students and expand students’ skills”, 44<sup>th</sup> ASEE/IEEE Frontiers in Education Conference: Opening Doors to Innovation and Internationalization in Engineering Education, Madrid, Spain, 24 Oct. 2014.
30. Kavakeb S., Nguyen T., Yang Z., Jenkinson I.J., “An improved memetic algorithm to enhance the sustainability and reliability of transport in container terminals”, Seventh IEEE Symposium on Computational Intelligence for Security and Defense Applications (CISDA), 14-17 December 2014, Hanoi, Vietnam.
31. Kavakeb S., Nguyen T.T., Yang Z., Jenkinson I., “Identifying the robust number of intelligent autonomous vehicles in container terminals”, 16<sup>th</sup> European Conference on the Applications of Evolutionary and Bio-inspired Computation, EvoApps, Granada, Spain, 23-25 April 2014.
32. Kot P., Shaw A., Jones K.O., Cullen J., Mason A., Al-Shamma’a A., “The feasibility of using electromagnetic waves in determining the moisture content of building fabrics and the cause of the water ingress”, 8<sup>th</sup> International Conference on Sensing Technology (ICST 2014), Liverpool John Moores University, Liverpool, 2-4 September 2014.
33. Nguyen T.T., Jenkinson I., Yang Z., “An experimental study of combining Evolutionary Algorithms with KD-Tree to solving dynamic optimisation problems”, Applications of Evolutionary Computation 2014 (best reviewing score, nominated for best paper award).
34. Nguyen T., Kavakeb S., Yang Z., Jenkinson I.J., Wang J., (2014), “Identifying the optimal type and number of transfer vehicles to improve productivity in ports - A simulation approach”, 19<sup>th</sup> Annual Logistics Research Network Conference (LRN), 3 -5 September, Huddersfield, UK.
35. Qu Z., Laidlaw P., Fraser G., Jenkinson I., Wang J., Yang Z., “Revised FMEA model to facilitate Six Sigma quality control in shipping management”, International Association of Maritime Economics Conference 2014 (IAME2014), July 15-18, 2014, Norfolk, USA.
36. Rajarathnam K., Gomm J.B., Jones K.O., Yu D., Abdelhadi A.S., “Decentralised control optimisation for a glass furnace by SGA’s”, International Conference on Computer Systems and Technology (CompSysTech’2014), Ruse, Bulgaria, 27 to 28 June 2014.
37. Riahi R., Robertson I., Jenkinson I., Bonsall S., Wang J., “A model for evaluating the security level of a port”, Annual European Reliability and Safety Conference, Amsterdam, 30<sup>th</sup> Sept. – 2<sup>nd</sup> Oct. 2013, Safety, Reliability and Risk Analysis: Beyond the Horizon – Steenbergen et al. (Eds), 2014 Taylor & Francis Group, London, 2014, 3245-2252, ISBN 978-1-138-00123-7.
38. Salleh, N. H. M., Riahi, R., Yang, Z., Wang, J., “A proposed fuzzy Bayesian Belief Network model for evaluating the knowledge management capability of liner shipping operator”, Proceeding of the 11<sup>th</sup> International Conference on Enterprise Systems, Accounting and Logistics, 29<sup>th</sup> June - 3<sup>rd</sup> July 2014, Crete, Greece, 12-24, ISBN: 978-960-287-146-1.
39. Salleh, N. H. M., Riahi, R., Yang, Z., Wang, J., “Risk assessment of liner shipping from a business environment perspective”, Proceeding of the 2<sup>nd</sup> International Conference on Vulnerability and Risk Analysis and Management and the 6<sup>th</sup> International Symposium on Uncertainty, Modelling, and Analysis, 13<sup>th</sup> July - 16<sup>th</sup> July 2014, Liverpool, UK, 2320-, ISBN: 978-0-7844-1360-9.
40. Salleh, N. H. M., Riahi, R., Yang, Z., Wang, J., “Fuzzy Bayesian belief network approach for assessing the operational reliability of a liner shipping operator”, Second International Conference on Advances in Economics, Management and Social Study -EMS 2014, Paper ID: EMS-14-524, 20-21 December, 2014, Malaysia, Kuala Lumpur.
41. Wang H., Ren J., Wang J., Yang J., “Research on developing a conceptual framework to evaluate effectiveness of emergency response system for oil spill”, 14<sup>th</sup> COTA International conference of Transportation Professionals, Changsha, China, July 4-7, 2014, ISBN 978-0-7844-1362-3.
42. Yang Z., “Formal security assessment - New approaches to maritime security risk quantification”, International Association of Maritime Economics Conference 2014 (IAME2014), July 15-18, 2014, Norfolk, USA.
43. Saeed F., “Enhancing non-technical skills training for deck officers”, IAMU AGA 15 conference Australian Maritime College, ISBN 978-0-9806391-4-8.

#### ***Invited talks/Workshop papers/posters/other papers***

44. Kavakeb S., Nguyen T., Yang Z. and McGinlay K. “Optimisation and simulation for traffic management in container ports”, Invited presentation in the workshop of EU MC ENRICH project, 9-10 October 2014, Edinburgh, UK.
45. Nguyen T.T., Yang Z., “Traffic Management and space optimisation – research contribution to InTraDE project”, Presentation in the workshop of EU InterReg IVB InTraDE project, 4-5 December 2014, Lille France.
46. Kavakeb S., Harrison M., Nguyen T.T., Yang Z., Jenkinson I., Wang J., Bonsall S., “Traffic management in container ports: Identifying the robust number of IAVs and selecting the optimal route of IAVs in container terminals”, Presentation in the workshop of EU InterReg IVB InTraDE project, 4-5 December 2014, Lille France.
47. Nguyen T.T., Kavakeb S., Yang Z., Jenkinson I., Wang J., “Identifying the optimal type and number of transfer vehicles to improve productivity in ports: Simulation approach”, Presentation in the workshop of EU InterReg IVB InTraDE project, 4-5 December 2014, Lille France.
48. Nguyen T.T., Jenkinson I., Yang Z. Invited presentation for CILT seed-corn award winners. Logistics Research Network, CILT conference, 2014, Huddersfield, UK.
49. Yang Z., Ng A.K.Y. (2014), “Port adaptation to climate change: A risk analysis approach”, Invited speech in the Environmental and Sustainability Forum & Port and Maritime Forum by the Chartered Institute of Logistics and Transport, 2<sup>nd</sup> July, Liverpool, UK.

#### ***Other publication***

50. Wang J., “Marine and offshore safety assessment may be much more complicated than many people think”, Journal of UK Safety and Reliability Society, Vol.34, No.4, 2014, 52-55.

## **Appendix 2: LOOM monthly seminars in 2014**

Time: 10.00-11.15, first Wednesday of each month from February 2014.

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

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

22nd January

Haddad Sandra, “A Study of the Implementation of Relationship Marketing Approach in Supply Chain Performance”.

5th February

Dr. Haiyan Wang, Wuhan University of Technology, “Facilitating effectiveness evaluation of emergency response for oil spill”  
Abstract: Large scale oil spill incidents would make significant impacts on human lives, property and environment. In the face of ever-increasing risk of disaster losses, how to cope with and response to large scale oil spill effectively is becoming more and more important. It is extremely onerous and arduous to develop a highly capable assessment technique to evaluate the effectiveness of emergency response for oil spill (EROP). This research aims to develop a framework to evaluate the effectiveness of EROP. It is achieved by using the combination of fuzzy reasoning and evidential synthesis by exploiting a sound methodology for the assessment of effectiveness of EROP. This will aid to make improvement in the EROP.

Monday 17th March 2014 (14.00 – 15.00)

External speaker, Dr. Fitri Bin Abdul Rahman, Universiti Malaysia Terengganu, “Inland waterways transport safety”

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

2nd April

Mr. Saleh Fahed Saleh Al-Khatib, “Factors affecting logistics service providers’ performance”

Mr. Chaoyu Li, “Risk modelling and simulation of the chemical supply chain using system dynamics approach”.

4th June

External speaker, Aldis Bulis, University of Latvia, "Trading with Russia and beyond: The new Silk Road, what now given the political situation?"

Abstract: The presentation is devoted to describing the place of Latvia in the East-West logistics and development of "New Silk Road", as well as the role of Russia in the East-West logistics and "New Silk Road". The actual situation will be analyzed, problems identified and probable solutions suggested. Discussions on further scientific studies and development of the East-West logistics/trade (e.g. Europe-Russia-China, Europe-Russia, Europe-China, E20 Route) will be given.

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

2nd July

Miss Celine Ly, “Simulation and optimization of container handling in a port terminal”

Mr. Ahmad Fayas Ahmad Najib, "Development of Decision Making Techniques for Analysing the Designation of the Northern Sea Route (NSR)"

9th July

External speaker, Dr Yevgeny Aksenov (National Oceanography Centre, UK), “Predicting arctic ocean environment”

Abstract: The recent environmental changes in the Arctic have clearly demonstrated that the climate change has occurs faster and more vigorous in the Polar Regions than anywhere else. The change in the Arctic Ocean environment presents a variety of impacts, social-economical, political and ecosystem. The mitigation of the change and adaptation require detailed and robust environmental predictions. We present an overview of the recent development in the ocean research and modeling, which serves a basis for the climate predictions in the Arctic Ocean. We demonstrate the use of the projections in maritime industries.

Time: 14.00 – 15.15, Tuesday 12th August 2014, Room 227, James Parson

External speaker, Prof. X.P. Yan, Wuhan University of Technology, “Maritime technology research at WUT”

Abstract: This seminar is supported by the Royal Academy of Engineering through a Distinguished Visiting Fellowship Award  
Abstract: Concerns have been raised to navigational safety and environmental protection worldwide because of the increasing throughput and the passing ships during the past decades. New technologies in marine power engineering have been proposed and utilized globally for safer and greener ships. This talk will introduce some recent techniques developed by the Reliability Engineering Institute (REI) of Wuhan University of Technology (WUT), e.g. condition monitoring & fault diagnosis, wear control, antifouling, shaft dynamics, shaft power measurement, renewable marine energy, energy efficiency improvement, maritime risk assessment and marine accident simulation. Subsequently, a few case studies that have been carried out in China are introduced to illustrate the general application of those approaches. These examples aim to demonstrate how advanced methodologies can facilitate effective design and operation of ship power system under complex marine environments.

1st September, 2pm. Venue: R227, James Parsons Building



External speaker, Prof. Adolf K.Y. Ng, Associate Professor of Transport, Logistics and Supply Chain Management, I.H. Asper School of Business, University of Manitoba, Canada, “Institutions and Paradigm Shifts in the Planning of Transport Infrastructures: The Case of the CentrePort Canada Way Project”

Abstract: The paper investigates the planning and development process of the CentrePort Canada Way (CCW) project, which took place in 2009-2013. The CCW is regarded as a pivotal project in helping CentrePort Canada, the major inland port in Winnipeg and the province of Manitoba, to become a major inland transport and logistics hub in catalyzing and promoting international trade between Manitoba, Canada and the world. It focuses on how institutions have caused paradigm shifts in the planning culture of infrastructure projects in Manitoba, and how they have transformed the initial idea, financial support, planning and construction of the CCW project. The authors hypothesize that institutions have influenced in an important manner on the direction of planning and development the CCW project, in both positive and negative ways. The necessary information was collected through semi-structured, in-depth interviews with relevant personnel, including senior officials from both the federal and provincial levels, planners, interest groups of transport operators, to name but a few. The paper offers important insight to the roles of institutions on the planning and development process on large-scale transport infrastructure projects.

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

8th October 1.30pm-3.00pm - Room 2.16, James Parsons Building

External speaker, Ron Bell, OBE, Director of Engineering Consultants Ltd, "How safety is Safe Enough?", jointly with the School of Engineering, Technology and Maritime Operations.

5th November

External speaker, Mr. Kevin Toye, Principal Transport Consultant AECOM (previously, one of the directors in transport department in Liverpool City Council, “Smart Technology and Impacts on Transport Policy and Operations”

Speech highlights: UK Government is keen to take the lead on Smart City systems whilst also enabling and supporting growth within a digital economy. Innovate UK (formerly the Technology Strategy Board) is an executive non-departmental public body, part funded by the Department for Business Innovation and Skills, to provide the framework (and supportive funding where applicable) for the development of new systems and products within various verticals under the Digital Economy. The rapid evolution of transport technology, from driverless vehicles, to data capture from smart devices and other wearable technology, will massively uplift our intelligence and understanding of the Transport System from current data capture and clearly also provide opportunities to explore and develop innovative products and systems to take to market. This presentation will set out the key trends and opportunities within the Transportation vertical setting out areas to be explored further.