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LOOM members in 2021

Dr. David R. Allanson (DRA)
Dr. Milad Armin (MA)
Dr. Ariyan Ashkanfar (AA)
Dr. Musa Bashir (MB)
Dr. Eddie Blanco-Davis (EBD)
Dr. Alan Bury (AB)
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)
Abdul Khaliq (AK)
Dr. Mohamed Kara-Mohamed (MKM)
Dr. Christos Kontovas (CK)
Dr. Sean Loughney (SL)
Dr. Linghai Lu (LL)
Dr. Sean Makleson (SM)
Dr. Dante Ben Matellini (DBM)
Dr. Christian Matthews (CM)
Dr. Marco Messina (MM)
Prof. Trung Thanh Nguyen (TTN)
Dr. Dimitrios Paraskevadis (DP)
Dr. Robyn Pyne (RP)
Dr. Jun Ren (JR)
Dr. Ali Rostami (AR)
Dr. Mehdi Seddighi (MS)
Dr. Ava Shahrokhi (AS)
Prof. Jin Wang (JW)
Prof. Zaili Yang (ZY)
Dr. Qian Zhang (QZ)

Other members involved in PhD supervision at LOOM

Prof. T. Bektas, University of Liverpool (TB)
Prof. Juergen Branke (JB), Warwick University
Dr. A Bras (AB), LJMU
Mr. P. Davies (PD), LJMU
Dr. C. Iris, University of Liverpool
Prof. Y. Jin (YJ), Surrey University
Prof. Roland Larek (RL), Univ. of Applied Sciences, Germany
Dr. C. Michailides (CM), Cyprus University of Technology
Prof. S. Nazir (SN), University College of Southeast Norway
Prof. A. Ng (AN), University of Manitoba, Canada
Dr. Z. Qu (ZQ), LJMU
Dr. R. Riahi (RR), Columbia Shipmanagement, Germany
Prof. S. Yang (SY), De Montford University
Prof. Y. Yang (YY), Ningbo University, China

LOOM researchers (doctoral/postdoctoral) in 2021

Dr. I. Ademola
R. Abdulkadir
Dr. D. Agarwal
S. Caldwell
S. Campbell
J. Canas
O. Chukwuka
N. Cook
J. Cutler
Dr. I. Deplano
A. Ehiagwina
J. Ender
C. Evans
Dr. S.Q. Fan
D. Fitch
J. Ford
C. Froment
S. Gbako
Ms X. Ge
A. Gugusa
A. Habib
D. Hitchmough
B. Ishaya
M. Jenkins
K. Ji
C. Jones
S. Jones
N. Karimalis
B. Kelly
A. Khaliq
H. Khansaheb
J. Kolonic
T. Larsen
Dr H. Li
Miss X. Liang
Dr. A. Makki
Dr. O. Maklad
C. Michailides
T. Morris
Miss B. Mu
I. Nawaz
L.C. Newton
M. Oregbeyiwa
A. Palin
P. Papageorgiou
C. Park
C. Pitt
Dr Chingpong (Mark) Poo
R. Povall-Griffin
B. Qian
J. Reed-Jones
R. Ren
Dr A. Romano
O. Salih
L. Sanders
M. Sanousi
Dr. M. Seddiq
E. Shaw
H. Sivori
L Speed
A. Spiteri
M. Stringfellow
S. Symes
S. Toh
G. Tsapparellas
R. Tuladhar
P. Ugedi
M. Usman
S. Waddington
Dr. Y. Wang
A. Withington
Miss X. Zhan

Visiting researchers

Dr. D.Z. Huang
Ms Noor Fifinatasha Shahedan

Visiting professors

RAEng Visiting Professor D. Cooper, Risktec
RAEng Visiting Professor Tony Graham, Blueportfolio

It has been identified that the LOOM's research emphasis in 2022 is:

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

1. Research publications (published in 2021)

The following are the outputs published in 2021 (for details, see Appendix 1):

- 1 book chapter.

- 63 SCI-cited refereed journal papers (incl. ESCI).
- 5 other journal papers.
- 24 refereed conference papers.
- 3 other publications.

2. Doctoral, postdoctoral and international research visiting projects (completed, on-going and started in 2021)

2.1 Research projects completed in 2021

PhD projects

1. Dr. A. Ehiagwina, “Agent based modelling of port traffic” (2018-2021), funded by LJMU. (IJ, *et al.*)
2. Dr. J. Ender, “A research into interaction among humans, machines and networks across the digitised industry at present and in the future” (2017-2021), funded by HS Wismar - University of Applied Sciences, Germany. (FBG, *et al.*)
3. Dr. B. Kelly, “The Development of a Recruitment Tool to Improve the Process of Selection and Ongoing Retention of Deck Cadets in the UK Merchant Navy” (2021). (EBD *et al.*)
4. Dr. A. Makki “The Impact of Container Carrier Heavy Goods Vehicles on Road Transportation Operation, Safety, and Logistics” (2006-2021). (TTN, *et al.*)
5. Dr. M. Usman, Risk based maintenance, funded by Lloyds Register and LJMU, 2021. (ZY, *et al.*)

Postdoctoral projects

6. Dr. I. Ademola, “Marine pollution prevention – the case of mobile ballast water management systems” (03/2021), funded by the EU. (CK *et al.*)
7. N. Cook, “Cloud-based passenger assist system for railway industry” (2021), funded by UKRI. (TTN, *et al.*)
8. Dr. I. Deplano, “Cloud architecture and intelligent dashboard to collect and analyse real-time sensor data for sustainable travel” (2019-21), funded by the ERDF. (TTN, *et al.*)
9. C. Evans, “Web authentication and other cloud development for sensor monitoring and evaluation” (2020-21), funded by the DfT via LCR CA. (TTN, *et al.*)
10. C. Froment, “Storyboarding and video production for LJMU rail research” (2020-21), funded by the DfT via InnovateUK. (TTN, *et al.*)
11. J. Kolonic, “AV engineering for promoting LJMU rail research products” (2020-21), funded by the DfT via InnovateUK. (TTN, *et al.*)
12. Dr. C. Michailides, “Structural health modelling of floating offshore wind turbines” (2018-2021), funded by EU. (JW *et al.*)
13. T. Morris, “Handling real-time data stream and messaging for railway systems” (2020-21), funded by the DfT via InnovateUK. (TTN, *et al.*)
14. A. Palin, “Managing the development process of communication and information system for railway staff” (2020-21), funded by the DfT via InnovateUK. (TTN, *et al.*)
15. Dr A. Romano, Blue Economy (2020-2021), funded by EU. (ZY, *et al.*)
16. E. Shaw, “Risk-based specifications of portable power packs for different applications – part 1” (2020-2021), funded by the Ministry of Defence via QinetiQ. (MB, *et al.*)
17. G. Tasapparalas, “IoT system for sustainable travel” (2019-21), funded by the ERDF. (TTN, *et al.*)
18. R. Tuladhar, “Front-end development for communication systems in rail” (2020-21), funded by the DfT via InnovateUK. (TTN, *et al.*)
19. A. Withington, “Designing user experience and human-computer interaction for railway systems” (2020-21), funded by the DfT via InnovateUK. (TTN, *et al.*)

Visiting research projects

20. Dr. D. Cooper, “Safety and Engineering Risk Management” (2018-2021), Visiting Professor from Risktec and funded by the Royal Academy of Engineering. (DBM, *et al.*)
21. B. Qian, “Advanced planning and control methods for multi-agent robotic systems” (2020-2021), funded by Shanghai Dianji University. (QZ, *et al.*)

2.2 On-going research projects in 2021

Doctoral projects

22. Mrs R. Abdulkadir, “Supply chain integration: empirical evidence from Kaduna State public health supply chains” (2020-2023). (DBM, *et al.*)
23. S. Caldwell, “Integrated decision support for sustainable maritime supply chains: Understanding the harmonisation of big data and industry 4.0” (2019-2022). (RD, *et al.*)
24. J. B. Campbell, “A study of turbulence and heat transfer in pulsating flows”, funded by LJMU FET Scholarship (2019-2022). (MS, *et al.*)
25. O. Chukwuka, “Risk analysis for emergency supply chain with particular focus on intermodal transport” (2019-2022), funded by Nigeria. (JR, *et al.*)
26. J. Cutler, “Performance Evaluation of a Combined Floating Offshore Energy System (CFOES) in Operational and Extreme Conditions” (2019-2022), funded by LJMU Scholarship. (MB, *et al.*)
27. Ms X. Ge, “The Impact of Ethnographic Research for Urban Regeneration, in Particular the Redevelopment of Post-industrial Sites in China” (2019-2022), (FBG, *et al.*)
28. S. Gbako, “Benchmarking the current state of the art of Inland Waterways” (2019-2022). (DP, *et al.*)
29. A. Habib, “Analysis of Sustainable Supply Chain Management (SSCM) practice in the Ethiopian coffee supply chain” (2020-2023). (JR, *et al.*)
30. B. Ishaya, “A risk assessment framework on the prevention and management of modern-day slavery in global supply chain” (2020-2024). (DP *et al.*)
31. M. Jenkins, “An investigation and evaluation of workplace substance misuse programmes and compliance with drug and alcohol policy” (2019-2024). (DBM, *et al.*)
32. K. Ji, “Swarm intelligence-based decision-making for many-agent autonomous systems” (2017-2021), funded by LJMU and CSC. (QZ, *et al.*)

33. S. Jones, "Reciprocity and Mutuality: A Study into the Emergence of a New Maritime Economy in the Liverpool City Region (2019-2022). (IJ, *et al.*)
34. H. Khansaheb, "Solutions to the sedimentation and maintenance of semi-enclosed channels (2019-2022). (IJ, *et al.*)
35. A. Khalique, "Eliminating instrumental distractions on ship's bridge to improve OOW's situational awareness focus", (2019-2026). (EBD *et al.*)
36. Miss K. Morrison, "Voice tampering, alterations and audio deepfakes: standardisation of detection methods" (2019-2022). (KJ, *et al.*)
37. I. Nawaz, "Risk-based verification of offshore installations on the United Kingdom continental shelf" (2012-2022), funded by Lloyd's Register. (DBM, *et al.*)
38. L.C. Newton, "Investigating turbulent-turbulent transition of transient flow over smooth and rough surfaces" (2019-2022), funded by LJMU FET Scholarship. (MS, *et al.*)
39. M. Oregbeyiwa, "Increasing energy efficiency in ports" (2019-2022). (CHC, *et al.*)
40. C. Park, "Cybersecurity risk assessment in the maritime industry" (2019-2022). (CHC, *et al.*)
41. J. Reed-Jones. "Binaural Sound Localisation for Smart Sensors using Hybrid Neural Networks" (2019-2022), funded by LJMU Scholarship. (KJ, *et al.*)
42. R. Ren, "Development of a novel risk management system for cold chain packaging" (2020-2023). (JR, *et al.*)
43. O. Salih, "Investigation of an intelligent shunt for Hydrocephalus monitoring" (2018-2022). (MM, *et al.*)
44. 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" (2017-2022), funded by LJMU scholarship. (DBM, *et al.*)
45. Miss H. Sivori, "Maritime Simulation-based stress-induced analysis and mitigating methods while applying functional near-infrared spectroscopy (fNIRS)" (2019-2022), funded by a FET scholarship. (EBD, *et al.*)
46. A. Spiteri, "Ship hull drag reduction using air cousin induced by a modified hull" (2019-2022). (MA, *et al.*)
47. S. Symes, "Ship simulator-based seafarers' skill acquisition incorporating the use of Functional-Infrared Spectroscopy (fNIRS)" (2017-2021), funded by LJMU scholarship. (ZY, *et al.*)
48. S. Toh, "Computational wear prediction for orthopaedic applications" (2019-2022) (AA *et al.*)
49. P. Ugedi, "Assessing the effectiveness and implementation of the SOLAS Verified Gross Mass (VGM) Regulation" (2016-2021), funded by the Faculty and the Nigerian Maritime Administration and Safety Agency. (CK, *et al.*)
50. Miss X. Zhan, "A Design-Led Research Project in Urban Regeneration: How Environmental Psychology can help in Restructuring the Post-Industrial Landscape" (2019-2022). (FBG, *et al.*)

On-going postdoctoral project

51. Dr. D. Agarwal, "Rotorcraft simulation fidelity" (2019-2022), funded by EPSRC. (LL)
52. D. Fitch, "Managing the development, installation, evaluation and maintenance processes for the Smart Green Things – a suite of digital products for LCR Sustainable Green Travel Corridors" (2019-21), funded by the ERDF and LCR CA. (TTN, *et al.*)
53. Dr. A. Makki "Surveying and analysing sensor data for sustainable travel" (2021-2022), , funded by UKRI. (TTN, *et al.*)
54. Dr. O. Maklad, "On the Development of a Novel Approach in Modelling of Turbulent Pulsating Flows" (2020-2023), funded by EPSRC. (MS, *et al.*)
55. Dr. M.C. Poo "Blue Economy" (2020-2022), funded by ERDF. (ZY, *et al.*)
56. Dr. M. Seddiq, "Development of next generation of Anilox Rolls and Sleeves" (2019-2021), funded by InnovateUK. (MS, *et al.*)
57. Dr. Y. Wang, "Emergency decision support system of offshore platform fires" (2020-2022), funded by EU. (JW, *et al.*)

2.3 Research projects started in 2021

Doctoral projects

58. J. Canas "Computational finite element and wear analyses for shoulder joint replacements." (2021-2024). (AA, *et al.*)
59. J. Ford, "Sustainability in the decommissioning process of UK offshore installations and the management of hazardous waste" (2021-2025) (SL *et al.*)
60. A. Gugusa, "Analysis of cold chain logistics performance in the floriculture industry: The case of Ethiopian Floriculture", funded by Kuhne Foundation, (IJ, *et al.*)
61. D. Hitchmough, "Hull-Propeller interaction on ships using Air Lubrication: A study into enhancing ship design and construction for an environmentally efficient operation" (2021-2025). (EBD *et al.*)
62. N. Karimalis, "The Effect of Management Standards and Systems on Greek Shipping Companies (As an Extension of Corporate Governance Practices)" (2021 – 2028). (SL *et al.*)
63. T. Larsen. "Development of framework for reliability and survivability of Wave Energy Converters (WECs)" (2021 – 2024). (MB *et al.*)
64. X. Liang, "Sustainability Freeports" (2021-2023). (ZY *et al.*)
65. M. Moammer, An evaluation of risk methodologies and framework for building a smart port (2021-2024), funded by Libyan Government. (MB *et al.*)
66. T. Onasanya, "Investigation of wall shear stress and flow behaviour in pulsating blood flows in large arteries", funded by LJMU FET Scholarship (2021-2025). (MS, *et al.*)
67. C. Pitt, "Total Knee replacement; why they fail prematurely and how to increase their lifespan?" (2021-2024). (AA, *et al.*)
68. R. Povall-Griffin, "Usage of stabilised plasma as an alternative method for water treatment", (2021-2025). (EBD *et al.*)
69. R. Ren, "Development of a novel risk management system for cold chain packaging" (2020-2023). (JR, *et al.*)
70. Z. Saleh, "Unsteady CFD Simulation of Offshore Floating Wind Turbines in Platform Motions" (2021-2024). (AS, *et al.*)
71. M. Sanousi. "Methodologies and framework for developing a smart port" (2021 -2025). (MB *et al.*)
72. L. Speed, "Digitally unsmudging fingerprints using forensic software", (2021-2026) Self-funded (part-time). (KJ *et al.*)
73. Mike Stringfellow, "An Evaluation of the Attainment of Students Based on the Adjustment of Key Variables Within Technical and Vocational Training (TVET)" (2021-2025), EngD, supported by SkillSea. (IJ, *et al.*)
74. Miss B. Yu, "Interface And Interaction: A Design-Oriented Research For Maritime Service Design" (2021-2024). (FBG, *et al.*)

Postdoctoral projects

75. Dr. S. Fan “Human reliability analysis” (2021-2024), funded by ERC. (ZY, *et al.*)
76. C. Jones, “Analysing sensor data for promoting active travel in the LCR” (2021-2022), funded by DfT via LCR CA. (TTN, *et al.*)
77. Dr H. Li “Autonomous ship risk analysis” (2021-2023), funded by ERC. (ZY, *et al.*)
78. E. Shaw, “Risk-based specifications of portable power packs for different applications part 2” (2021-2022), funded by the Ministry of Defence via QinetiQ. (MB, *et al.*)
79. R. Tuladhar, “Front-end development for communication systems in rail” (2020-21), funded by the DfT via InnovateUK. (TTN, *et al.*)
80. G. Tsapparellas, “IoT sensors for 15-minute city” (2021-2022), funded by EPSRC Decarbon8. (TTN, *et al.*)
81. A. Withington, “User interface design for passenger assist in railway applications” (2021-22), funded by UKRI. (TTN, *et al.*)

Visiting research projects

82. Z. Xu, “Development of data mining techniques for structural health monitoring of offshore wind turbines” (10/2021 - 10/2022), funded by China Scholarshi Council. (MB, *et al.*)

3. LOOM monthly seminars in 2021

2 LOOM monthly seminars were organised in 2021. COVID 19 led to a significant reduction of delivery of LOOM seminars.

4. Research grants in 2021

4.1 External grants

Grants completed in 2021

• EU ERDF Interreg - Atlantic Blue Port Services (2017-2021)	€185,400	(CK, <i>et al.</i>)
• RAEng., VP in Risk Management (2018-2021)	£30,000	(DBM, <i>et al.</i>)
• UKRI - Mitigation of risks associated dental aerosols (2020-21)	£8,500	(IJ, <i>et al.</i>)
• MoD/QinetiQ Ltd - Specifications of Power Packs (2020-2021)	£55k	(MB, <i>et al.</i>)
• InnovateUK - Next generation of Anilox Rolls (2019 – 2021)	£396,431	(Sharp & MS, <i>et al.</i>)
• UK DfT - PopupWatch - Emergency popup routes (2020-21)	£18,000	(TTN, <i>et al.</i>)
• InnovateUK & DfT – communication system for rail (2020-2021)	£330,000	(TTN, <i>et al.</i>)
• UKRI – IRIS2 – Information system for railway staff (2021)	£97,000	(TTN, <i>et al.</i>)

On-going grants in 2021

• MarRI UK - Lookout Awareness of Distractions (2020-2022)	£170,000	(AK, FBG, <i>et al.</i>)
• AHRC-Newton fund: Urban revitalisation (2018 – 2022)	£249,290	(FBG, <i>et al.</i>)
• IAMU - Organizational Development Project (2020 – 2022)	\$28,676	(IJ, <i>et al.</i>)
• EU H2020, REMESH – Emergency Resources Chain (2019-2023)	€1,300,000	(JR, <i>et al.</i>)
• RAEng - Decommissioning of Offshore Structures (2020-2024)	£12,800 (out of £200k)	(JW, <i>et al.</i>)
• EU Horizon 2020 – Offshore fire emergency systems (2020-2022)	€224,934	(JW, <i>et al.</i>)
• H2020 RESET – Rel. and Safety Eng. and Tech. (2017-2023)	€1,471,500	(JW, <i>et al.</i>)
• Research In geopolymer concretes (EU H2020, 2016-2022)	€180,000 (out of €516k)	(JW, <i>et al.</i>)
• Resilience of off. wind energy platforms, Royal Soc. (2018-22)	£12,000	(JW, <i>et al.</i>)
• UK EPSRC - Rotorcraft simulation fidelity (2018-2022)	£365,697	(LL)
• EU, RoCS - Rotorcraft Certification by Simulation (2019-2022)	€140,000 (out of €3m)	(LL)
• RAEng- Safer End to Engineered Life (2020-2021)	£10,000	(MA, <i>et al.</i>)
• EU Interreg - ARCWIND - Floating wind energy (2017-2022)	€400,437 (out of €4m)	(MB & JW, <i>et al.</i>)
• EPSRC - Modelling of Turbulent Pulsating Flow (2020 – 2023)	£259,481	(MS, <i>et al.</i>)
• Innovate UK – Flexible Manufacturing (2020-2022)	£120,000	(RD, <i>et al.</i>)
• EU Erasmus+, SKILSEA: Futureproof Skills (2019-2023)	€148,860 (out of €4m)	(RP, <i>et al.</i>)
• EU ERDF – LCR Green Sustainable Corridors (2018-2022)	£673,000 (out of £8.35m)	(TTN, <i>et al.</i>)
• UK DfT – PopupWatch2 - Emergency popup routes (2021-22)	£17,000	(TTN, <i>et al.</i>)
• ERC – Container transport resilience (2020-2025),	€1,990,000	(ZY)
• EU H2020 – Food Supply Chains (2018-2024)	€189,000	(ZY, <i>et al.</i>)
• EU H2020 – Human reliability and training (2019-2023)	€173,000 (out of €1m)	(ZY, <i>et al.</i>)
• EU Interreg - Knowledge transfer for blue economy (2019-2023)	€480,000 (out of €2.43m)	(ZY, <i>et al.</i>)

Grants started in 2021

• ESRC-MOST – MASS: UK-Taiwan joint cooperation (2021-22)	£31,000 (out of £62,000)	(CHC, <i>et al.</i>)
• InnovateUK - Reducing Maritime Emissions £48,028 (20201-22)	£48,028 (out of £498k)	(EBD, <i>et al.</i>)
• LCR - Development funding (Mar. Knowledge Hub) (2021-23)	£97,000	(IJ, <i>et al.</i>)
• RAEng - VP in Marine Tech. & Project Man. (2021-24)	£30,000	(JW, <i>et al.</i>)
• MoD (UK) via QinetiQ - MoD battery certification (2021-22)	£71,100	(MB, <i>et al.</i>)
• UKRI - Modelling of Turbulent Pulsating Flows (2021-22)	£14,000	(MS, <i>et al.</i>)
• IAMU - Maritime Safety Optimization (2021-2022)	\$20,000	(SL, <i>et al.</i>)

Grants awarded in 2022

• InnovateUK - Smart Grant “Reducing Mar. Emissions” (2022-24)	£49k (out of 499k)	(EBD, <i>et al.</i>)
• IAMU- Addressing Human Error & Performance (2022-23)	\$60,000	(FBG, <i>et al.</i>)
• British Council – UK-Malaysia University Consortium (2022-24)	£100,000	(JW, <i>et al.</i>)
• EPSRC DecarboN8 Co-designing the 15-minute city (2021-2022)	£25,000	(TTN, <i>et al.</i>)

5. Evidence of national and international peer esteem in 2021

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

- Guo F.B., "Driving the renovation: a comparative research in urban regeneration across cities in China", Keynote Speech, Pan Tongji Design Week 2021: Sino British Community Regeneration Symposium, Shanghai, 25 December 2021 (Online).
- Guo F.B., "Changing the role of design: a shift from technology driven to user centred design", Keynote speech, 2021 International Forum on User Experience Development. Zhengzhou China. 06 Nov 2021 (Online).
- Yang Z., "Risk analysis and prediction of cycling accident severity", Plenary speech in the 10th International Conference on Transportation and Traffic Engineering (ICTTE 2021), December 24-26, 2021, Chengdu, China (Online).

b. Other invited presentations

- Adeyeri I., Paraskevadakis D., "An analysis of the UK and EU Ferry industry during Brexit and the Covid 19 pandemic", 4th Global Conference on Innovation in Marine Technology and the Future of Maritime Transportation, 18th-19th November 2021 (Online).
- Armin M., "On the development of a nonlinear time-domain numerical method for describing vortex-induced vibration and wake interference of two cylinders using experimental results" Seminars at Marine Research Group (MRG), Queen's University Belfast (QUB), 25 November 2021.
- Chukwuka O, Ren J, Wang J, Paraskevadakis D., "A preliminary research on risk management in emergency supply chains", 2021 Logistics Research Network Conference
- Chukwuka O, Ren J, Paraskevadakis D. Disaster Relief Procurement: A literature Review 2021 1st Business and Entrepreneurship international conference
- Guo F.B., "Does being human cause human errors: consideration of human-centred design in ship-bridge design, Industrial Cognitive Ergonomics and Engineering Psychology Conference (ICEEP) 2021", New York, USA. 25-29 July 2021 (Online).
- Jenkinson I., Author Q&A, British Dental Journal, 2021.
- Nguyen T.T. "IRIS: Information system for railway station staff", invited speech at Rail Innovation Exhibition 2021, organised by UKRI and KTN, February 2021 (online, 1156 registered participants)
- Nguyen T.T., "LJMU research and applications in railway", invited talk at "Passenger First - Let's build passenger confidence in rail" jointly organised by Esoterix, Cogitaire, and LJMU, supported by SouthEastern, GwR, Merseyrail and InnovateUK, March 2021 (online, 116 registered participants)
- Nguyen T.T. "Real-time information provision for railway staff and passenger assist at stations", invited talk at "We want our trains to run on time", July 2021 (Only).
- Seddighi M., "Turbulent-turbulent transient flow", Isfahan University, Invited talk at ThermoFluids research group, 07 October 2021.
- Yang Z., "Climate risk and resilience analysis in transportation", Invited speech in the 2nd Climate Change and Adaptation Planning for Ports, Transport Infrastructures, and the Arctic (CCAPTIA), June 28-30, 2021 (Online).
- Zhan X., "Psychological impact on design: Empirical case studies in city regeneration of post-industrial sites", Industrial Cognitive Ergonomics and Engineering Psychology Conference (ICEEP) 2021, New York, USA. 25-29 July 2021 (Online).

c. Participation in journal editorial boards

- Editorial Board of Journal of Renewable Energy, MDPI Energies Journal and MDPI Applied Sciences. (AS)
- Member of Editorial Board International Journal of Transportation Engineering and Technology; Member of Editorial Board International Journal of Crisis Communication; Member of Editorial Board Maritime Business Review. (CHC)
- Member of Section Board for Sustainable Transportation Section - MDPI Sustainability. (CK)
- 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 Executive Board of the International Association of Maritime Universities. (IJ)
- Member of the Review Board of International Journal of Ocean Systems Engineering; Member of the Review Board of International Journal of Agile Systems and Management. (JR)
- Deputy Editor of Journal of Marine Science and Technology. (JW)
- Member of the Editorial Board for the American Journal of Neural Networks and Applications; Member of the Scientific Board for the Informatica Economica Journal (<http://revistaie.ase.ro/>); Member of the International Journal on Information Technologies and Security; Member of the Editorial Board International Journal of Intelligent Systems and Applications in Engineering; Member of the Editorial Board for the Journal of Mathematical Control Science and Applications; Member of the Editorial Board (Topic Editor) for Mathematics. (KJ)
- Member of editorial board of the Journal of Mechanical Engineering Research. (MA)
- Member of the Review Board of International Journal of Fatigue; Member of the Review Board of Energy; Member of the Review Board of Ocean Engineering Journal; Member of the Review Board of Journal of Waterway, Port, Coastal, and Ocean Engineering. (MB)
- 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"; Member of the Editorial Board for IEEE Transactions on Affective Computing. (SF)
- Guest Editor, Mathematical Problems in Engineering. (TTN)
- Member of Editorial Board of European Journal of International Management; Member of Editorial Board of Journal of Marine Science and Engineering; Member of Editorial Board of Journal of Transportation Research Part E: Logistics and Transportation Review; Associate Editor of IMA Journal of Management Mathematics; Member of Editorial Board of Ocean and Coastal Management; Member of Editorial Boards of the ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems: Part A Civil Engineering and Part B Mechanical Engineering. (ZY)

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

- Reviewer for Dutch Research Council (NWO). (CHC)
- Advisor on the Ports and Terminals Advisory Group for UK Trade & Investment (UKTI). (IJ)
- Member of the IMO Formal Safety Assessment Experts Group. (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. (LL, MS)
- Editorial Advisor, Cambridge Publishing Group; External reviewer, the National Foundation for Science and Technology Development of Vietnam; 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; 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, Netherland, Canada; Member of the Steering Committee of Liverpool City Region Freeport Project, UK. (ZY)

e. Learned society involvement

- Member of American Institute of Aeronautics and Astronautics (AIAA). (AS)
- Member of International Association of Maritime Economics (IAME). (CHC, ZY)
- Member of the Chartered Institute of Logistics and Transport (CILT). (CHC)
- Chairman of the Chartered Institute of Logistics and Transport (CILT) Merseyside and Warrington group. (DP)
- Committee member of the CILT Logistics Research Network (LRN) Forum. (DP)
- Member of the Association for Project Management. (DP)
- Committee member of the North West Branch of the IMarEST. (EBD)
- Committee member of the Consortium of Manufacturing Engineering Heads. (IJ)
- Chairman of Maritime Transportation Safety, European Safety and Reliability Association (ESRA). (JW)
- Member of Council for the Institute of Measurement and Control. (KJ)
- Member of Maritime UK Technology and Innovation Group; Member of MariRi-UK Working Group. (MA)
- President of Psychophysiology in Ergonomics (an international working group of the International Ergonomics Association). (SF)
- Co-Chairman, YoungShip Liverpool; Member Institute of Marine Engineering, Science and Technology (IMarEST). (SL)
- Member of the Combustion Institute (UK Sector); Member of the UK Consortium on Turbulent Reacting Flows (UKCTRF). (SM)
- Founding director of International Association of Transport, Trade and Service Studies (IATTSS). (ZY)

f. External PhD examinership

- 1 PhD examination at Strathclyde University. (CK)
- 1 PhD examination at the University of Derby. (JR)
- 1 PhD examination at Norwegian University of Science and Technology, Norway. (JW)
- 1 PhD examination at Heriot-Watt University. (MS)
- 1 PhD examination at University of Birmingham. (TTN)
- 1 PhD examination at Wuhan University of Technology, (China); 1 at Mahidol University (Thailand); 1 at Cardiff University; and 1 at University of Alto (Finland). (ZY)

g. Involvement of conference organisation

- Scientific Committee member , 4th Global Conference on Innovation in Marine Technology and the Future of Maritime Transportation, 18th-19th November 2021 (Online). (DP)
- Co-chair of the 2021 5th International of Conference on System Reliability and Safety (ICSRS 2021), November 24-26, 2021, Palermo, Italy. (JW)
- Co-Chairman of the organisation committee of the 6th International Conference on Transportation Information and Safety (ICTIS), 22-24 October 2021, Wuhan, China. (JW, ZY)
- Programme Chair of the 10th International Conference on Transportation and Traffic Engineering (ICTTE 2021, December 24-26, 2021), Chengdu, China. (ZY)
- Co-Chair of Industrial Cognitive Ergonomics and Engineering Psychology Conference (ICEEP) 2021”, New York, USA. 25-29 July 2021 (FBG).

h. Prizes/honours

- Best presenter award by R. Abdulkadir at the 3rd Annual African Conference on Operations and Supply Chain Management. (DBM, *et al.*)
- Faculty PVC’s Awards for Best PhD Thesis 2021 - Dr. S. Hassan “Onshore Cross Country Pipelines Risk Assessment and Decision Making under Uncertainty”. (Hassan S.)
- Faculty PVC’s Awards for Best PhD Thesis 2021 - Dr. I. Deplano “Operational Research and Machine Learning Applied to Transport Systems”. (TTN *et. al.*)
- LJMU VC Award for Excellence in Research and Knowledge Transfer; 10th LOGMS Conference Second Best Student Paper Award; 14th ICASL Conference Best Paper Award. (ZY)

i. Consultancy

- England and Wales High Court (Patent Court), Case No: HP-2019-000047 . Expert witness in Patent Dispute. (CM)
- Merseyrail, Merseytravel, LCR Combined Authority, Sefton Council, Northern Trains, Sustrans, Future Yard. (TTN)

j. Others

- MSc thesis by Badr Moutik winner in Maritime UK Maritime Masters competition. (EBD, *et al.*)
- Working in partnership with Risktec Solutions delivering distance learning and face-to-face modules. (DBM)

Appendix 1: Publications published in 2021

Book chapters

1. Loughney S, Edesess AJ, Applications of Industrial IoT and WSNs in O&M Programmes for Offshore Wind Farms Intelligent Systems, Control and Automation: Science and Engineering, 2022, Vol.76 , 223-245.

Refereed academic journal papers (SCI cited)*

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3. Asuquo M.P., Wang J., Phylip-Jones G., Riahi R., “Condition monitoring of marine and offshore machinery using evidential reasoning techniques”, Journal of Marine Engineering & Technology, 2021, Vol.20, No. 2, 93–124. (IF: 3.192)
4. Chang C.H., Kontovas C., Qing Y., Yang., “Risk assessment of the operations of maritime autonomous surface ships”, Reliability Engineering and System Safety, 2021, Vol.207, 107324. (IF: 6.188)
5. Chang C.H., Lu C.S., Lai P.L. “Examining the drivers of competitive advantage of the international logistics industry”, International Journal of Logistics: Research and Application, 2021, 1-19. Doi: 10.1080/13675567.2021.1915263. (IF: 2.152)
6. Chen C., Ma F., Xu X., Chen Y., Wang J., “A novel ship collision avoidance awareness approach for cooperating ships using multi-agent deep reinforcement learning”, Journal of Marine Science and Engineering, Vol.9(10), 10.3390/jmse9101056. (IF: 2.458)
7. Deplano I., Lersteau C., Nguyen T.T., “A mixed-integer linear model for the multiple heterogeneous knapsack problem with realistic container loading constraints and bins' priority”, International Transactions in Operational Research, 2021, Vol.28, 3244-3275. (IF: 4.2)
8. Ehtezazi T., Evans D., Jenkinson I.D., Evans P.A., Vadgama V.J., Vadgama J., Jarad F., Grey N., Chilcott R.P., “SARS-CoV-2: characterisation and mitigation of risks associated with aerosol generating procedures in dental practices”, British Dental Journal, 2021, 10.1038/s41415-020-2504-8. (IF: 1.612)
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10. Guo F.B., Roberts E., Zhan X., Johnston K., “Consideration of human-centred emotional design and cultural strategy in urban regeneration in China”, Journal of Urban Design, 2021, Vol.26(6), doi:10.1080/13574809.2021.1921569. (IF: n/a)
11. Hassan H., Wang J., Kontovas C., Bashir M., “Modified FMEA hazard identification for cross-country petroleum pipeline using fuzzy rule base and approximate reasoning”, Journal of Loss Prevention in the Process Industries, 2021, doi: 10.1016/j.jlp.2021.104616. (IF:3.66)
12. Hassan H., Wang J., Kontovas C., Bashir M., “An assessment of Causes and Failure Likelihood of Cross-Country Pipelines under Uncertainty using Bayesian Networks”, Reliability Engineering and System Safety, 2021, Vol.218, Part A, Doi: 10.1016/j.ress.2021.108171. (IF: 6.188)
13. Hao W., Bashir M., Li C., Sun C., “Flow control for high-solidity vertical axis wind turbine based on adaptive flap”, Energy Conversion and Management, 2021, Vol.249, 114845 ISSN 0196-8904. (IF: 9.709)
14. Kaptan M., Sarialioğlu S., Uğurlu Ö., Wang J., “The evolution of the HFACS method used in analysis of marine accidents: A review”, International Journal of Industrial Ergonomics, 2021, Vol.86, doi: 10.1016/j.ergon.2021.103225. (IF: 2.656)
15. Yang Y., Bashir M., Michailides C., Mei X., Wang J., Li C., “Coupled analysis of a 10 MW multi-body floating offshore wind turbine subjected to tendon failures”, Renewable Energy, 2021, 10.1016/j.renene.2021.05.079. (IF: 8.001)
16. Yildiz S., Sönmez V.Z., Uğurlu O., Sivri N., Loughney S., Wang J., “Modelling of possible tanker accident oil spills in the Istanbul Strait in order to demonstrate the dispersion and toxic effects of oil pollution”, Environmental Monitoring and Assessment, Vol.193, 2021, 538, doi.org/10.1007/s10661-021-09339-w. (IF: 2.513)
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18. Huang D.Z., Loughney S., Wang J., “Identification of China’s Strategic Transport Passages in the Context of the Belt and Road Initiative”, Maritime Policy & Management, 2021, doi: 10.1080/03088839.2021.2017037. (IF: 3.778)
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20. Qian B., Gao S., Li Q., Zhang Q., Wang Y., “A fast adaptive beamforming algorithm based on gram-schmidt orthogonalization”, Journal of Nanoelectronics and Optoelectronics, 2021, Vol.16, 642-650. (IF= 1.069)
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22. Jiang M., Lv J., Qu Z., Yang Z., “Port vulnerability assessment from a supply chain perspective”, Ocean & Coastal Management, 2021, Vol.213, 105851. (IF:3.284)
23. Jiang M.Z., Lu J., Qu Z., Yang Z., “Safety evaluation of the ports along the Maritime Silk Road”, Maritime Policy and Management, 2021, doi: 10.1080/03088839.2021.1903598. (IF: 3.778)
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26. Lin C.C., Chang, C.H., “Evaluating employees perception toward the promotion of safety marketing at ports”, International Journal of Shipping and Transport Logistics, 2021, Vol.13, No.3/4, 275-299. (IF: 0.914)
27. Loughney S., Wang J., Bashir M., Armin M., Yang Y., “Development and application of a multiple-attribute decision-analysis methodology for site selection of floating offshore wind farms on the UK Continental Shelf”, Sustainable Energy Technologies and Assessments, Vol.42, 2021, doi.org/10.1016/j.seta.2021.101440. (IF: 5.353)
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29. Malkeson S.P., Ahmed U., Pillai A.L., Chakraborty N., Kurose R., “Flame self-interactions in an open turbulent jet spray flame”, Physics of Fluids, 2021, Vol.33, 035114, doi: 10.1063/5.0039155. (IF: 3.521)

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37. Sakaris C.S., Bashir M., Yang Y., Michailides C., Wang J., Sakellariou J.S., "Diagnosis of damaged tendons on a 10 MW multibody floating offshore wind turbine platform via a response-only Functional Model Based Method", *Engineering Structures*, 2021, Vol.21, doi: 10.1016/j.engstruct.2021.112384. (IF: 4.471)
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42. Sievert L., Stancioiu D., Matthews C., "Active vibration control of a small-scale flexible structure subject to moving-loads and experimental validation", *Journal of Vibration and Acoustics-Transactions of the ASME*, 2021, Vol.143(6), doi: 10.1115/1.4050852. (IF: 1.583)
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Other academic journal papers

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