RESUME

Name:	Houxiang Zhang
Nationality:	German
Present position:	Full Professor
	Institute leader for research (Nestleder forskning)
Address:	Norwegian University of Science and Technology
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ACADEMIC DEGREES

02/2011	**Habilitation. Informatics.** Department of Informatics, Faculty of Mathematics, Informatics and Natural Science, University of Hamburg, Germany.
09/2000-12/2003	**Ph.D., Mechanical and Electronic Engineering.** Robotics Institute, Beihang University (Beijing University of Aeronautics and Astronautics)
09/1997-04/2000	**MSc. Mechanical and Electronic Engineering.** Robotics Institute, Beihang University (Beijing University of Aeronautics and Astronautics)
09/1993-07/1997	**BSc. Mechanical and Electronic Engineering,** School of Mechanical Engineering and Automation, Beihang University (Beijing University of Aeronautics and Astronautics)

ACADEMIC MEMBERSHIP

2019-	**NTVA member (The Norwegian Academy of Science and Technology)**
2012-	***2012 IEEE Senior member***
2020-	***ASME member***
2011-2016	***Norwegian National Gift Professorship supported by Norwegian Centre of Expertise***

PROFESSIONAL WORKING EXPERIENCE (2000-Present)

04/2011-present	**Professor**	Department of Ocean Operations and Civil Engineering Faculty of Engineering Norwegian University of Science and Technology (NTNU), Norway
04/2011-04/2016	**Gift Professorship**	Norwegian Centre of Expertise

01/2007-03/2011	**Senior researcher / Dozent**	Institute of Technical Aspects of Multimodal Systems Department of Computer Science, University of Hamburg, Germany.
02/2004-12/2006	**Postdoctoral researcher**	Institute of Technical Aspects of Multimodal Systems Department of Computer Science, University of Hamburg, Germany.

AWARDS AND HONOURS

- ***Finalist for Best Conference*** of 2020 IEEE International Conference on Mechatronics and Automation (ICMA 2020).
- ***Best Technical Paper*** of CLAWAR 2015, 18th International Conference on Climbing and Walking Robots and the Support Technologies for Mobile Machines, Hangzhou, China.
- ***Best Conference Paper in Information*** of 2014 IEEE International Conference on Information and Automation (ICIA2014).
- ***Best Student Paper*** of 2014 IEEE International Conference on Information and Automation (ICIA2014).
- ***Best Conference Paper*** of 2008 IEEE/ASME International Conference on Advanced Intelligent Mechatronics, Xi'an, China.
- ***Finalist for Best Student Paper*** *of IEEE BioRob 2014* of 5th IEEE RAS & EMBS International Conference on Biomedical Robotics and Biomechatronics (BioRob), São Paulo, Brazil. 2014
- ***Finalist for Best Student Conference Paper*** of ICIA2008, Zhangjiajie, Hunan, China.
- ***Finalist for Best Conference Paper*** of 2007 IEEE/ASME International Conference on Advanced Intelligent Mechatronics, ETH Zurich, Switzerland.
- ***Finalist for Best Conference Paper*** of 2006 IEEE International Conference on Robotics and Biomimetics, Kunming, China.

RESEARCH INTERESTS

- ***Artificial intelligence, machine learning and relate applications***
- ***Marine automation, digitalization and ship intelligence***
- ***Control, optimization, and human machine interaction especially on field robotics and autonomous vehicle***
- ***Biological robots and modular robotics, especially on system design and locomotion control***
- ***Hybrid modelling and co-simulation***

OTHER INFORMATION FOR RESEARCH AND EDUCATION

SELECTED RESEARCH PROJECTS (2005-Present)

2015-2023	**Key applicant**	Centers for Research-based Innovation project (SFI) "Marine operations Centre for Research Based Innovation" NTNU as the coordinator (Total budget: 190 Million NOK).
2015-2023	**Scientific member / Board member**	Centers for Research-based Innovation project (SFI) "Offshore Mechatronics", WP3 and WP4. (Total budget:190 Million NOK).

2020-2023	**PI**	IKTPLUSS "Remote Control Centre for Autonomous Ship Support (AuReCo)", Project partners: Vard Electro AS, Offshore Simulator Center, Ålesund Kunnskapspark AS, Harbin Engineering University (Total budget: 9 M NOK).
2020-2023	**Key member**	Innovation project in the business section-MAROFF IPN "Development of a Novel Process for the Application of Krill as Alternative protein Source in Human Nutrition", Project partners: Møreforsking Ålesund AS, Rimfrost, Universitet i Bergen, Norwegian University of Science and Technology, Møreforsking Molde AS (Total budget: 9 M NOK).
2020-2021	**Project manager**	RFF M&R project "Dynamic Power Cable Installation Optimization for Floating Offshore Wind Farms", Project number: 312904 (Total budget: 1.4 M NOK).
2021-2022	**Project manager**	RFF M&R project "A Dashboard System for Maritime Crane Condition Monitoring and Predictive Maintenance", Project number: 317737 (Total budget: 1.0 M NOK).
2019-2021	**PI**	Innovation project in the business section-MAROFF IPN "Towards Ship Autonomy in Harbour Maneuvering and Intelligent Docking (Auto docking)", Project partners: Rolls-Royce Marine AS, Offshore Simulation Centre, Norwegian University of Science and Technology, SINTEF Aalesund (Total budget: 10 M NOK).
2018-2021	**PI**	Innovation project in the business section-MAROFF IPN "Riser Operation Replacement Optimization (RORO)", Project partners: Offshore Simulation Centre, NTNU Aalesund, Subsea 7 AS, AKER solution AS. (Total budget: 9 M NOK).
2018-2021	**PI**	Knowledge-building Project for Industry-MAROFF KPN "Digital Twins for Vessel Life Cycle Service (TwinShip)", Project partners: DNV GL, NTNU, Rolls Royce Marine, Ålesund Kunnskapspark AS (ÅKP) and SINTEF Aalesund (Total budget: 32 M NOK).
2018-2020	**Key member**	Integrated Technologies Long-term Deployment of Robotic Underwater platforms (INTENDU) (EU MarTERA) (Total budget: ca.4.0 M NOK).
2018-2020	**PI**	RFFMIDT project "On-Board Augmented Simulator", Project partners: Offshore Simulation Center (Total budget: 1.6 M NOK).
2019-2020	**Project manager**	RFFMIDT project "Dynamic Motion Planning Based on Trajectory Prediction", Project partners: Offshore Simulation Center (Total budget: 1.6 M NOK).
2017-2018	**PI**	RFFMIDT project "An Integrated Sensor Fusion System for Fatigue and Awareness Assessment in Demanding Marine Operation", Project partners: Offshore Simulation Center (Total budget: 1.6 M NOK).

2016-2017	**PI**	GCE Blue Innovation grant project "Virtual prototyping system winch", Project partners: Seaonics AS and Offshore Simulation Centre (Budget: 800 K NOK).
2016-2017	**PI**	An international cooperation project, "Ultrasonic testing instrument for rail flaw detection robot", Shanghai Shen Hang IMP. EXP. Co. LTD (Total budget: 1.4 M NOK).
2016-2016	**PI**	VRI grant project, "A Mini SAR module for oil spill detection" with Ocean Visuals AS as the project partner (Total budget: 400 K NOK).
2016-2016	**PI**	VRI grant project, "Kunstig Intellignes for Vinsjdesign (KIV)" with Seaonics AS as the partner (Total budget: 400 K NOK).
2014-2016	**PI**	Innovation project in the business section-MAROFF IPN "Next Generation Simulator for Marine Crane Design and Operations-Virtual Crane Prototyping System", Project partners: Rolls-Royce Marine AS, Offshore Simulation Centre (Total budget: 5.4 M NOK).
2016-2017	**Key member**	RFFMIDT project "An Approach toward Optimal Control of Ship Maneuvering in Offshore Operations", Project partners: Rolls-Royce Marine AS, Offshore Simulation Center (Total budget: 1.0 M NOK).
2014-2015	**PI**	RFFMIDT project "A UAV SAR System for Oil Spill Detection in the Arctic", Project number: 235283 (Total budget: 1.0 M NOK).
2013-2014	**Key member**	"MS GUNNERUS" -Et fullskalalaboratorium for testing av framtidens marine teknolgi i tett samarbeid mellom næring og akademia" (Total budget: 1.4 M NOK).
2014-2014	**PI**	VRI project, "Robotisert sandblasing av innvendig skipsskrog", (400 K NOK).
2013-2014	**PI**	International cooperation project "A Smart Climbing Robot with Small Manipulator", funded by King Abdulazlz City For Science and Technology in Saudi Arabia (KACST) (Total budget: 1.6 M NOK).
2012-2012	**PI**	RFFMIDT, ES486093/217454, "A Novel Climbing Robot System for Ship Anti-fouling, Cleaning and Inspection" (Total budget: 1.0 M NOK).
2012-2013	**PI**	Innovation project in the business section-MAROFF IPN, No.217769, "A Novel Integrated Anti-sway System for Rolls-Royce Marine Shipboard Cranes", Project partners: Rolls-Royce Marine AS, Offshore Simulation Center (Total budget: 2.0 M NOK).
2012-2013	**PI**	Innovation project in the business section-MAROFF IPN, No. 217768, "A Flexible and Common Control Architecture for Rolls-Royce Marine Cranes and Robotic Arms", Project partners: Rolls-Royce Marine AS, Offshore Simulation Center (Total budget: 4.0 M NOK).
2010-2013	**PI**	German DFG, No.U4604-DFG-10-01, "Biologically Inspired Modular Climbing Caterpillar Robot Using Passive Adhesion" (Total budget: 400 K Euros).

2005-2007	**Key member**	Praktikum "Mobile Roboter" mit Simulation und Telerobotik-Zugang (TELEBOTS), Funded by Elch, Hamburg Foundation.

EDITORIAL WORK

- ***2022- Associate Editor, IEEE Robotics & Automation Magazine***
- ***2022- Associate Editor, IEEE Transactions on Automation Science and Engineering***
- ***2021- Technical Editor, IEEE/ASME Transactions on Mechatronics***
- ***2021- Associate Editor, IEEE Robotics and Automation Letters***
- ***2021- Associate Editor, IEEE Transactions on Intelligent Transportation Systems***
- ***2021- Guest Editor of "Special Issue on Intelligent Transportation Systems in Epidemic Areas" with IEEE Transactions on Intelligent Transportation Systems.***
- ***Keynote Speeches Chairs, 15th IEEE Conference on Industrial Electronics and Applications, 9-13 Nov. 2020, Kristiansand, Norway***
- ***Program co-chair of 27th European Conference on Modelling and Simulation, 27-30 May,2013, Aalesund, Norway.***
- ***Regular reviewer for journals and conferences: IEEE Trans., IEEE Mags. RAM, IRCA, IROS***

PHD SUPERVISION

CURRENT PHD CANDIDATES

1. Peihua Han. ***Data-based maintenance for prediction of ship propulsion performance and reliability.*** Co-supervision Associate Prof. Guoyuan Li and Prof. Hans Petter Hildre (NTNU).
2. Tongtong Wang. ***Intelligent and flexible domain models for digital twins of maritime design and operation***. Co-supervision Associate Prof. Guoyuan Li and Prof. Vilmar Æsøy (NTNU).
3. Baiheng Wu. ***Synthesis of Human-in-the-Loop Control in Ship Intelligence***. Main supervisor Associate Prof. Guoyuan Li (NTNU), co-supervisors: Prof. Houxiang Zhang and Prof. Hans Petter Hildre.
4. Maximiliano Crescitell. ***Multisensor Fusion for Modelling Dynamic Marine Operation Environment***. Co-supervision Associate Prof. Lars Christian Gansel (NTNU).
5. Qin Liang. ***Digital Twin driven Propulsion System Health Monitoring and Performance Optimization***. Co-supervision Prof. Vilmar Æsøy (NTNU).
6. Motoyasu Kanazawa. ***Model-based Control and Optimization for Ship Maneuvering in Complex Spatial environments***. Co-supervision Associate Prof. Guoyuan Li (NTNU).
7. Chunlin Wang. ***Data Analysis and Modelling for On-board Support of Marine Operations.*** Main supervisor Associate Prof. Guoyuan Li, co-supervision: Prof. Houxiang Zhang, Associate Prof. Ottar Osen (NTNU), and Associate Prof. Torodd Skjerve Nord (NTNU).
8. Ronny Landsverk. ***Coupled Dynamics between Vessel and Crane***. Main supervisor Prof. Jing Zhou, co-supervisors: Prof. Geir Hovland (UiA), Prof. Houxiang Zhang.
9. Sihan Gao. ***Modelling and simulation of the farm environment in sea-based salmon production***, Associate Prof. Lars Christian Gansel (NTNU), Associate Prof. Guoyuan Li (NTNU), and Prof. Houxiang Zhang.
10. Lene Æsøy. ***Hybrid Energy Systems for Ocean Farming Value Chain Optimization***, Associate Prof. Ann Rigmor Nerheim (NTNU), Associate Prof. Henry Piehl (NTNU), Prof. Houxiang Zhang
11. Sunghun Hong, ***Dynamic Analysis of a Floating Offshore Wind Turbine Installation***, Associate Prof. Karl Henning Halse (NTNU), Associate Prof. Torodd S. Nord (NTNU), Prof. Houxiang Zhang
12. Zizheng Liu, ***Anti-swing Control of Ship-mounted Crane***, Co-supervision Prof. Hans Petter Hildre (NTNU).

GRADUATED DOCTORAL CANDIDATES

1. Robert Skulstad. ***Data-based Ship Motion Prediction in Offshore Operations***. Co-supervision Prof. Thor I. Fossen (NTNU), and Dr. Bjørnar Vik (Kongsberg Marine AS). (Oral in Sept 2021)
2. Pierre Major. ***Data-driven Models for Multipurpose Rapid Prototyping***. Co-supervision Prof. Hans Petter Hildre (NTNU). (Oral on 19 August. 2021, four months in advance than schedule)
3. Lars Ivar Hatledal. ***Protocols and Standard for Integration of Simulation Models and Co-simulation***. Co-supervision Prof. Geir Hovland (UiA) and Assistant Prof. Arne Styve (NTNU). (Oral on 19 March. 2021, two months in advance than schedule)
4. Thiago Gabriel Monteiro. ***A Cross-modal Integrated Sensor Fusion System for Fatigue and Awareness Assessment in Demanding Marine Operations***. Co-supervision Dr. Charlotte Skourup (Head of R&D, ABB). (Oral in 3. Feb 2021, *Finished two months earlier than schedule*.)
5. Andre Ellefsen. ***Smart Marine Operation and Maintenance of Ships- Conditional based Decision Support***. Co-supervision Prof. Vilmar Æsøy (NTNU), Prof. Sergey Ushakov (NTNU), 2020 *(Finished two months earlier than schedule)*.
6. Xu Cheng. ***Sensitivity Analysis and Quality Assessment of ANN Models for Ship Motion Prediction***. Co-supervision Prof. Hans Petter Hildre and Associate Prof. Guoyuan Li (NTNU), 2020 *(Finished three months earlier*

than schedule).

7. Yingguang Chu. ***Virtual Prototyping Simulator for Marine Operation Systems***. Supervision with Vilmar Æsøy (NTNU Aalesund), Sören Ehlers (TUHH), 2018 (*Finished on time*).
8. Cong Liu. ***Multimodal Product Design - Development of Engineering Design Models in Systematic Approach***. Main supervisor Hans Petter Hildre, co-supervisors Houxiang Zhang (NTNU) and Terje Rølvåg (NTNU), 2016 (*Finished on time*).
9. Filippo Sanfilippo. ***Alternative and Flexible Control Methods for Robotic Manipulators***. Joint supervision, main supervisor Kristin Y. Pettersen (NTNU), 2015 (*Finished on time*).
10. Guoyuan Li. ***Hierarchical Control of Limbless Locomotion Using a Bio-inspired CPG Model***, Joint supervision, main supervisor Jianwei Zhang (UHH), 2013 (*Finished on time*).
11. Junhao Xiao. ***Planar Segments Based Three-dimensional Robotic Mapping in Outdoor Environments***. Joint supervision, main supervisor Jianwei Zhang (UHH), 2013 (*Finished on time*).

EXAMINED DOCTORAL CANDIDATES

1. Dr. Evalds Urtans, Function Shaping in Deep Learning, Riga Technical University, Dec. 2021.
2. Dr. Brian James Murray, Machine Learning for Enhanced Maritime Situation Awareness: Leveraging Historical AIS Data for Ship Trajectory Prediction, UiT, Norway, 2021.
3. Dr. Cheng Hu, Bio-inspired Visual Motion Sensing Systems for Mobile Robots, University of Lincoln, UK, 2017.
4. Dr. Fernando Herrero-Carrón, Universidad Autonoma de Madrid, Spain, 2011.
5. Dr. Juan Gonzalez-Gomez, Universidad Autonoma de Madrid, Spain, 2008.

TEACHING COURSE

From 2011-present, at NTNU

1. IP304814, “Introduction to mechatronics”, Bachelor course, as main lecturer, NTNU
2. IP501508, “Robotics”, Master course, as main lecturer, NTNU
3. IP506921, “Mechatronics and system integration”, Master course, as main lecturer, NTNU (Start from Fall 2021)
4. IP505245, “Applied AI and control”, Master course, as course coordinator, NTNU (Start from Fall 2021)
5. IP506821, “Design Project”, Master course, as second lecturer, NTNU (Start from Fall 2021)
6. TS8002, “Avanserte tema innen simulering og analyser av maritime operasjoner”, PhD course, as main lecturer, NTNU

Course information at NTNU could be found from

https://www.ntnu.edu/studies/courses#semester=2018&gjovik=false&trondheim=false&alesund=true&faculty=-1&institute=-1&multimedia=false&english=false&phd=false&courseAutumn=false&courseSpring=false&courseSummer=false&pageNo=1&season=autumn&sortOrder=relevancy&searchQueryString=Houxiang+Zhang

From 2007-2011, at Department of Informatics, Faculty of Mathematics, Informatics and Natural Science, University of Hamburg, Germany(UHH)

7. 64.450 Seminar: Integriertes Seminar Intelligent Robotics, UHH
8. 64.451 Project: Masterprojekt Intelligent Robotics (Teil 1 and Teil 2), UHH
9. 64.272 Practical course: Praktikum: Robot Practical Course, UHH
10. 64.126 Proseminar: Roboter und Aktivmedien. UHH

Course information at UHH could be found
https://tams.informatik.uni-hamburg.de/people/alumni/hzhang/lectures/index.php

PUBLICATIONS

Journals

1. Peihua Han; André Listou Ellefsen; Guoyuan Li; Vilmar Æsøy; Houxiang Zhang: Fault Prognostics Using LSTM Networks: Application to Marine Diesel Engine, ***IEEE Sensors Journal***, Date of Publication: 08 October 2021, ISSN Information: DOI: 10.1109/JSEN.2021.3119151.
2. Tongtong Wang, Guoyuan Li, Lars Ivar Hatledal, Robert Skulstad, Vilmar Æsøy and Houxiang Zhang: Incorporating Approximate Dynamics Into Data-Driven Calibrator: A Representative Model for Ship Maneuvering Prediction, ***IEEE Transactions on Industrial Informatics***, Accepted, 2021.
3. Motoyasu Kanazawa; Robert Skulstad; Guoyuan Li; Lars I. Hatledal; Houxiang Zhang: A multiple-output hybrid ship trajectory predictor with consideration for future command assumption, ***IEEE Sensors Journal***, Print ISSN: 1530-437X Online ISSN: 1558-1748 Digital Object Identifier: 10.1109/JSEN.2021.3119069
4. Peihua Han, Guoyuan Li, Xu Cheng, Stian Skjong and Houxiang Zhang: An uncertainty-aware hybrid approach for sea state estimation using ship motion responses, ***IEEE Transactions on Industrial Informatics***, DOI: 10.1109/TII.2021.3073462, 2021.
5. Robert Skulstad, Guoyuan Li, Thor Inge Fossen, Tongtong Wang and Houxiang Zhang: A co-operative hybrid model for ship motion prediction, ***Modeling, Identification and Control***, vol. 42, no. 1, pp. 17-26, DOI: 10.4173/mic.2021.1.2, 2021.
6. Tongtong Wang, Guoyuan Li, Baiheng Wu, Vilmar Æsøy and Houxiang Zhang: Parameter identification of ship maneuvering model under disturbance using support vector machine method, ***Ships and Offshore Structures***, accepted.
7. Yingguang Chu, Guoyuan Li, Lars Ivar Hatledal, Finn Tore Holmeset and Houxiang Zhang: Coupling of Dynamic Reaction Forces of a Heavy Load Crane and Ship Motion Responses in Waves, ***Ships and Offshore Structures***, DOI: 10.1080/17445302.2021.1907066, 2021.
8. Baiheng Wu, Guoyuan Li, Tongtong Wang, Hans Petter Hildre and Houxiang Zhang: Sailing status recognition to enhance safety awareness and path routing for a commuter ferry, ***Ships and Offshore Structures***, DOI: 10.1080/17445302.2021.1907084, 2021.
9. Pierre Major, Rami Zghyer, Houxiang Zhang and Hans Petter Hildre: A Framework for Rapid Virtual Prototyping: a case study with the Gunnerus research vessel Ship Technology Research, ***Ship Technology Research***, DOI: 10.1080/09377255.2021.1903128, 2021.
10. Pierre Major, Guoyuan Li, Hans Petter Hildre and Houxiang Zhang: The Use of a Data-Driven Digital Twin of a Smart City: A case study of Ålesund, Norway, ***IEEE Instrumentation & Measurement Magazine***, accepted.
11. Runze Mao, Guoyuan Li, Hans Petter Hildre and Houxiang Zhang: A survey of eye tracking in automobile and aviation studies: implications for eye tracking studies in marine operations, ***IEEE Transactions on Human-Machine Systems***, DOI: 10.1109/THMS.2021.3053196, 2021.
12. Chunlin Wang, Guoyuan Li, Robert Skulstad, Xu Cheng, Ottar Osen and Houxiang Zhang: ***A sensitivity quantification approach to significance analysis of thrusters in dynamic positioning operations***, Ocean Engineering, vol. 223, DOI: 10.1016/j.oceaneng.2021.108659.
13. Lars Ivar Hatledal, Yingguang Chu, Arne Styve and Houxiang Zhang: Vico: An Entity-Component-System Based Co-simulation Framework, ***Simulation Modelling Practice and Theory***, DOI: 10.1016/j.simpat.2020.102243, vol. 108, 2021.
14. Thiago Gabriel Monteiro, Charlotte Skourup, and Houxiang Zhang: A Task Agnostic MF Assessment Approach Based on EEG Frequency Bands for Demanding Maritime Operation, ***IEEE Instrumentation & Measurement***

Magazine, Accepted.

15. Lars Ivar Hatledal, Robert Skulstad, Guoyuan Li, Arne Styve and Houxiang Zhang: Co-simulation as a Fundamental Technology for Twin Ships, ***MIC Journal Modeling, Identification and Control***, vol. 41, no. 4, pp. 297-311, DOI: 10.4173/mic.2020.4.2, 2020.
16. Xu Cheng, Peihua Han, Guoyuan Li, Shengyong Chen, and Houxiang Zhang: A Novel Channel and Temporal-wise Attention in Convolutional Networks for Multivariate Time Series Classification, ***IEEE Access***, vol. 8, pp. 212247-212257, DOI: 10.1109/ACCESS.2020.3040515, 2020.
17. Peihua Han, Guoyuan Li, Robert Skulstad, Stian Skjong, and Houxiang Zhang: A Deep Learning Approach to Detect and Isolate Thruster Failures for Dynamically Positioned Vessels Using Motion, ***IEEE Transactions on Instrumentation and Measurement***, DOI:10.1109/TIM.2020.3016413, 2020.
18. Robert Skulstad, Guoyuan Li, Thor Inge Fossen, Bjørnar Vik, and Houxiang Zhang: A Hybrid Approach to Motion Prediction for Ship Docking— Integration of a Neural Network Model into the Ship Dynamic Model, ***IEEE Transactions on Instrumentation and Measurement***, DOI: 10.1109/TIM.2020.3018568, 2020.
19. Guoyuan Li, Håkon Bjerkgaard Waldum, Marcus Olai Grindvik, Ruben Svedal Jørundland, and Houxiang Zhang: Development of a vision-based target exploration system for snake-like robots in structured environments, ***International Journal of Advanced Robotic Systems***, vol. 17, no. 4, pp. 1-20, DOI: 10.1177/1729881420936141, 2020.
20. Xu Cheng, Guoyuan Li, André Listou Ellefsen, Shengyong Chen, Hans Petter Hildre, and Houxiang Zhang: A Novel Densely Connected Convolutional Neural Network for Sea State Estimation Using Ship Motion Data, ***IEEE Transactions on Instrumentation and Measurement***, vol. 69, no. 9, pp. 5984-5993, 2020, DOI: 10.1109/TIM.2020.2967115.
21. Shuai Yuan, Pierre Major, and Houxiang Zhang: Flexible Riser Replacement Operation Based on Advanced Virtual Prototyping, ***Ocean Engineering***, accepted, 2020.
22. Thiago Gabriel Monteiro, Guoyuan Li, Charlotte Skourup, and Houxiang Zhang: Investigating an Integrated Sensor Fusion System for Mental Fatigue Assessment for Demanding Maritime Operations, ***Sensors***, vol. 20, no. 9, pp. 2588, 2020.
23. Thiago Gabriel Monteiro, Charlotte Skourup, and Houxiang Zhang: Optimizing CNN Hyperparameters for Mental Fatigue Assessment in Demanding Maritime Operations, ***IEEE Access***, vol. 8, pp. 40402-40412, 2020.
24. André Listou Ellefsen, Peihua Han, Xu Cheng, F. T. Holmeset, V. Æsøy, and Houxiang Zhang: Online Fault Detection in Autonomous Ferries: Using Fault-type Independent Spectral Anomaly Detection, ***IEEE Transactions on Instrumentation and Measurement***, vol. 69, no. 10, pp. 8216-8225, 2020, DOI: 10.1109/TIM.2020.2994012.
25. Yonghui Shuai, Guoyuan Li, Jinshan Xu, and Houxiang Zhang: An effective ship control strategy for collision-free maneuver toward a dock, ***IEEE Access***, DOI: 10.1109/ACCESS.2020.3001976.
26. Runze Mao, Guoyuan Li, Hans Petter Hildre and Houxiang Zhang: Analysis and evaluation of eye behavior for marine operation training – A pilot study, ***Journal of Eye Movement Research***, vol. 12, no.3, DOI: 10.16910/jemr.12.3.6.
27. Guoyuan Li, Runze Mao, Hans Petter Hildre and Houxiang Zhang: Visual attention assessment for expert-in-the-loop training in a maritime operation simulator, ***IEEE Transactions on Industrial Informatics***, vol. 16, no. 1, pp. 522-531, 2020, DOI: 10.1109/TII.2019.2945361.
28. Yinfeng Fang, Jianhua Zhang, Naoyuki Kubota, Houxiang Zhang: Bio-Signal Analysis for Human Machine Interaction, ***International Journal of Humanoid Robotics***, vol. 16, No. 4, 2019, DOI: 10.1142/S021984361902002X.
29. Yonghui Shuai, Guoyuan Li, Xu Cheng, Robert Skulstad, Jinshan Xu, Honghai Liu and Houxiang Zhang: An

efficient neural-network based approach to automatic ship docking, ***Ocean Engineering***, accepted, DOI: 10.1016/j.oceaneng.2019.106514.

30. Guoyuan Li, Hans Petter Hildre and Houxiang Zhang: Toward time-optimal trajectory planning for autonomous ship maneuvering in close-range encounters, ***IEEE Journal of Oceanic Engineering***, DOI: 10.1109/JOE.2019.2926822.
31. Lars Ivar Hatledal, Arne Styve, Geir Hovland, Houxiang Zhang: A Language and Platform Independent Co-Simulation Framework Based on the Functional Mock-Up Interface, ***IEEE Access***, 2019;Volume 7. s. 109328-109339.
32. Robert Skulstad, Guoyuan Li, Thor I. Fossen, Bjørnar Vik, Houxiang Zhang: Dead Reckoning of Dynamically Positioned Ships: Using an Efficient Recurrent Neural Network, ***IEEE Robotics & Automation Magazine***, vol. 26, no. 3, pp. 39-51, 2019, DOI: 10.1109/MRA.2019.2918125.
33. André Listou Ellefsen, Vilmar Æsøy, Sergey Ushakov, and Houxiang Zhang: A Comprehensive Survey of Prognostics and Health Management based on Deep Learning for Autonomous Ships, ***IEEE Transactions on Reliability***, 2019, vol.68.(2) s. 720-740
34. Yueri Cai, Lingkun Chen, Shusheng Bi, Guoyuan Li, Houxiang Zhang: Bionic flapping pectoral fin with controllable spatial deformation, ***Journal of Bionic Engineering***, 2019, Accepted.
35. Pierre Major, Robert Skulstad, Houxiang Zhang, Hans Petter Hildre: Virtual prototyping: A case study of positioning systems for drilling operations in the Barents Sea, ***Ship and Offshore Structure***, 2019, 10.1080/17445302.2019.1601322.
36. André Listou Ellefsen, Vilmar Æsøy, Sergey Ushakov, and Houxiang Zhang: Validation of Data-Driven Labeling Approaches Using a Novel Deep Network Structure for Remaining Useful Life Predictions, ***IEEE Access*** 2019, vol.7. s. 71563-71575
37. Thiago Gabriel Monteiro, Houxiang Zhang, Charlotte Skourup: Using EEG for Mental Fatigue Assessment: A Comprehensive Look Into the Current State of the Art, ***IEEE Transactions on Human Machine Systems (THMS)***, Accepted.
38. Xu Cheng, Guoyuan Li, Robert Skulstad, Pierre Major, Shengyong Chen, Hans Petter Hildre, and Houxiang Zhang: Data-driven Uncertainty and Sensitivity Analysis for Ship Motion Modeling in Offshore Operations, ***Ocean Engineering***, vol. 179, pp. 261-272, 2019.
39. Yueri Cai, Xingwei Ren, Shusheng Bi, Guoyuan Li, Hans Petter Hildre, and Houxiang Zhang: Hydrodynamic development of a bionic pectoral fin for undersea monitoring platform, ***Ship and Offshore Structure***, 2019. DOI: 10.1080/17445302.2018.1559910.
40. Yingguang Chu, Birger Skogeng Pedersen, and Houxiang Zhang: Virtual Prototyping for Maritime Winch Design and Operations based on Functional Mock-up Interface Co-simulation Ships and Offshore Structures, ***Ship and Offshore Structure***, 2019, DOP:10.1080/17445302.2019.1577597.
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