

CURRICULUM VITAE

(August 2022)

NAME: ZHEN GAO



PERSONAL INFORMATION

Date of Birth: November 24th, 1977

Place of Birth: Pinghu City, Zhejiang Province, People's Republic of China

Gender: Male

Nationality: Chinese

Language: Chinese (native), English (fluent)

Hobbies: Soccer, Tennis, Table-tennis, Movie, Music, Travelling, Reading

Marriage Status: Married, one daughter

CURRENT CONTACT INFORMATION

Position: Professor (of Marine Structures), Elected Member of NTVA (Norwegian Academy of Technological Sciences) in 2020

Affiliation:

Department of Marine Technology,
Centre for Ships and Ocean Structures (CeSOS),
Centre for Autonomous Marine Operations and Systems (AMOS),
Centre for Marine Operations in Virtual Environments (SFI MOVE),
Norwegian University of Science and Technology (NTNU)

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EDUCATION

1996.9-2000.6

Bachelor, Naval Architecture and Ocean Engineering

Shanghai Jiao Tong University

Supervisor: Professor Yongning Gu

Thesis title: Local Strength Analysis of the Bow Structure of QHD32-6 FPSO

GPA: 3.52/4.0 *Rank:* 1/63

Award: Shanghai Excellent Graduate, 2000

2000.9-2003.3

Master of Science, Design and Manufacturing of Naval Architecture and Ocean Structure

Shanghai Jiao Tong University

Supervisor: Professor Yongning Gu

Thesis title: Numerical Simulation of Ship Collision and Study on Crashworthiness of FPSO's Side Structures

GPA: 3.64/4.0 *Rank:* 1/34

Award: 'Three-A' Model Student, Shanghai Jiao Tong University, 2001

2003.8-2008.2

Doctor of Philosophy, Marine Technology

Norwegian University of Science and Technology

Supervisor: Professor Torgeir Moan

Thesis title: Stochastic Response Analysis of Mooring Systems with Emphasis on Frequency-domain Analysis of Fatigue due to Wide-band Response Processes

GPA: 3.86/4.0

Award: ExxonMobil Research Prize for Best Doctoral Thesis in Applied Research, Norwegian University of Science and Technology, 2008

WORK EXPERIENCE

1998.8: Practice in Wusong Naval Port, Shanghai, China

1999.8: Practice in Jiang Nan Shipbuilding Corporation, Shanghai, China

2003.8-2008.2: PhD candidate, Centre for Ships and Ocean Structures, NTNU

2008.3-2011.8: Post-doctor fellow, Centre for Ships and Ocean Structures, NTNU

2010.8-2015.6: Adjunct associate professor (20% of time), Department of Marine Technology, NTNU

2011.9-2015.6: Researcher (80% of time), Centre for Ships and Ocean Structures, NTNU

2015.7-2020.7: DNVGL-sponsored professor, Department of Marine Technology, NTNU

2017.9-2021.8: Deputy Head in Research, Department of Marine Technology, NTNU

2015.7-: Professor, Department of Marine Technology, NTNU

RESEARCH FIELDS AND INTERESTS

Offshore Renewable Energy: numerical and experimental study of offshore wind turbines (both bottom-fixed and floating), wave energy converters (oscillating bodies and overtopping devices), tidal turbines and combined concepts; integrated methods for global dynamic load and response analysis of offshore wind turbines; hierarchical methods for local response analysis of wind turbine drivetrains; design and analysis of floating structures to support large-scale (5-15 MW) wind turbines; modeling and analysis of offshore wind turbines with geared drivetrain, direct drive and hydraulic transmission; mooring system design and analysis for offshore renewable energy platforms, including shallow waters.

Marine Operations: operational and safety criteria for marine operations related to offshore wind turbine transport, installation and access for maintenance and repair; numerical modeling and time-domain simulation of installation operation for offshore wind turbine components (such as crane operations for installing wind turbine blades, monopile, jacket and spar foundations); weather window and operability assessment using response-based criteria; assessment of uncertainties in numerical modelling and weather forecast and their effects on decision-making for marine operations.

Structural Mechanics and Dynamics: dynamic analysis of offshore structures using finite element methods; coupled mooring analysis; fatigue assessment of offshore structures; numerical simulation of ship collision and grounding.

Stochastic Analysis: frequency-domain cycle counting methods for fatigue analysis of wide-band processes; extreme value prediction and fatigue analysis of non-Gaussian processes; stochastic modeling of random waves, including spatially inhomogeneous waves; short-term and long-term statistics of wind and waves and their induced loads/responses; contour line or surface methods for long-term extreme responses of marine structures under separate or simultaneous wind and wave loads.

Reliability and Risk Analysis: uncertainty modeling and structural reliability assessment of offshore oil and gas platforms as well as renewable energy platforms; fatigue reliability methods applied to mechanical components (such as gearbox in wind turbines); fatigue reliability analysis of offshore wind turbine foundations (such as jacket) for inspection and maintenance planning; overload and fatigue reliability of mooring system.

Machine Learning Approaches and Data-driven Models Applied in Marine Technology: forecast of short-term (1-hour to 1-day ahead) wind and wave conditions using machine-learning approaches for decision-making for execution of marine operations; forecasting of short-term (1-3 wave periods ahead) motions of vessels and wave energy converters for control purpose; machine

learning approaches for fault/failure detection and diagnosis for wind turbine drivetrain/blade pitch actuator and marine structural components (such as mooring lines).

RESEARCH EXPERIENCE

Major Research Projects and Centres *(with a description of my main contributions)*

- **EU FP6 SEEWEC Project (2007.10-2009.3)**
The SEEWEC (Sustainable Economically Efficient Wave Energy Converter) project deals with the FO3 wave energy device, consisting of several (12 or 21) point absorbers placed under a semi-submersible floating platform. I was involved in the study of mooring systems of one platform and nine platforms interconnected by mooring lines.
- **IEA OC4 Benchmark Study (2010.3-2012.3)**
The OC4 (Offshore Code Comparison Collaboration Continuation) project is a benchmark study of numerical codes for dynamic analysis of offshore wind turbines with jacket and semi-submersible foundations, under IEA (International Energy Agency) Wind Annex XXX. I used USFOS-vpOne for comparison in the jacket phase.
- **EU FP7 MARINA Platform Project (2010.1-2014.6)**
The MARINA Platform (Marine Renewable Integrated Application Platform) project deals with the combination of wind turbines and wave energy converters on a single platform as well as in a farm. Numerical and experimental methods were applied to demonstrate the functionality and survivability of three combined concepts, which were selected based on a cost-benefit analysis. I was involved in the numerical analyses and the model tests of the SFC (semi-submersible wind turbine combined with flap-type wave energy converters) concepts.
- **EU FP7 MARINET (2011.4-2014.12)**
MARINET, the Marine Renewables Infrastructure Network, is a network of research centres and organisations that are working together to accelerate the development of marine renewable energy technologies - wave, tidal & offshore-wind. MARINET offers periods of free-of-charge access to world-class R&D facilities & expertise. Under the MARINET support, I was involved in both the survivability and functionality model tests of one of the MARINA combined concepts - the STC (spar-torus-combination) in the towing tank at INSEAN, Italy.
- **SFF CeSOS (2003-2012)**
CeSOS (Centre for Ships and Ocean Structures) is one of the Centres of Excellence funded by the Research Council of Norway. The research work conducted at CeSOS cover a wide range of the topics in marine hydrodynamics, structural mechanics and automatic control, with applications to ships and offshore structures. I am mainly involved in the area of offshore renewable energy. I obtained my PhD degree from and work as a researcher at CeSOS. I am also involved in the co-supervision of 9 PhD students with financial support from CeSOS.
- **FME NOWITECH (2009-2017)**
NOWITECH (Norwegian Research Centre for Offshore Wind Technology) is a research centre at SINTEF and NTNU, with research focus on deep-water (+30 m) offshore bottom-fixed and floating wind turbines and it is part of the Centre for Environment-friendly Energy Research (FME) scheme co-funded by the Research Council of Norway. I am involved in the co-supervision of 1 PhD candidate at the Department of Marine Technology, NTNU.
- **EU FP7 MARE-WINT Project (2012-2016)**
MARE-WINT (new MATerials and RELiability in offshore WIND Turbines technology) is a project with financial support under the FP7-PEOPLE-2012-ITN Marie-Curie Action: "Initial Training Networks" and it involves doctoral programmes for 14 researchers in multi-disciplinary area for future generation of offshore wind turbines engineering. I am involved in the co-supervision of 1 PhD candidate at NTNU. I co-organized the MARE-WINT Opening Seminar in Trondheim, Norway, September 2-6, 2013.
- **SFI MOVE (2015-2022)**
The SFI MOVE (Marine Operations in Virtual Environments) centre is one of the 17 Centres for Research-based Innovation in the third round funded by the Research Council of Norway. MOVE focuses on the development of knowledge, methods and tools for safe and efficient analysis of both

the equipment and the installation process and the establishment of virtual environments for simulating innovative installation methods and for training operators to improve the individual human actions as well as the team performance. I am involved in the supervision of 3 PhDs and 1 post-doc with focus on offshore wind turbine installation.

- ***SFF AMOS (2013-2022)***
Affiliated with AMOS (Centre for Autonomous Marine Operations and Systems), one of the Centres of Excellence funded by the Research Council of Norway, with the DNV-GL financially supported professor position.
- ***INTPART TechNOII (2019-2022)***
An international cooperation project on research and education, funded by the Research Council of Norway. I am the responsible person at NTNU.
- ***EMULF (2020-2022)***
EMULF (Efficient Numerical Modelling Methods for Design and Analysis of Ultra-large Floating Wind Turbines) is a project, funded by COWI Fonden with COWI Norway, NTNU, DTU and DNVGL as partners, that deals with numerical modelling of ultra-large (15MW) floating wind turbines to take into account the flexibility of the floater in global response analysis.
- ***InteDiag-WTCP (2020-2023)***
An international cooperation project between Norway and China on the use of digital technologies, with focus on structural health/condition monitoring and fault detection/diagnosis for onshore and offshore wind turbine critical components, including blades, gearbox and foundations. It is a cooperation between NTNU, Hunan University in China and their respective university and industry co-operators. I am the project coordinator on the Norwegian side.
- ***CONWIND (2020-2023)***
An international cooperation project between Norway and China on energy, with focus on operation control for offshore wind farms to minimize wake loss, reduce turbine loads and comply with grid constraints. I am one of the co-supervisors for 1 postdoc.
- ***SFI BLUES (2021-2028)***
The SFI BLUES centre is one of the Centres for Research-based Innovation funded by the Research Council of Norway. BLUES focuses on developing future generation of floating marine structures with focus on offshore renewable energy, aquaculture and coastal infrastructures. I am involved in the supervision of 1 PhD and 1 post-doc with focus on inhomogeneous waves and their effect on floating structure's responses.
- ***FME NORTHWIND (2021-2028)***
NORTHWIND is a national research centre on offshore wind in Norway, with an aim to contribute to the future cost-effective and large-scale deployment of offshore wind turbines, under the Centre for Environment-friendly Energy Research (FME) scheme from the Research Council of Norway. It is coordinated by Sintef Energy, with strong involvement of Sintef Ocean and NTNU. I am the deputy leader for WP2. I am involved in the supervision of 1 PhD candidate at the Department of Marine Technology, NTNU.

Educational Cooperation

- **Erasmus Mundus MSc Programme – European Wind Energy Master (EWEM), in cooperation with Oldenburg University, DTU and TU Delft, Supervision of the master students in the Offshore Engineering Track, since 2013; Offshore Engineering Track coordinator at NTNU, since 2017.**

Academic Cooperation (co-operator, topic and year)

- Prof. Robert Melchers at University of Newcastle, Australia, Corrosion of Mooring Chains, 2007.
- Prof. Luis V.S. Sagrilo at COPPE, Federal University of Rio de Janeiro, Brazil, Extreme Response Analysis of a Turret-moored FPSO, 2010.
- Asst. Prof. Nilanjan Saha at Indian Institute of Technology, Madras, Short-term Extreme Response Analysis of an Offshore Jacket Wind Turbine, 2010.
- Torben J. Larsen at the Department of Wind Energy, DTU, Correction of the Wheeler Stretching Model for Irregular Waves in HAWC2, 2010.

- Prof. George Kallos at National and Kapodistrian University of Athens, Long-term Joint Distribution of Wind and Wave Conditions for Design of Combined Wind and Wave Energy Concepts, under the MARINA Platform Project, 2012.
- Prof. Claudio Lugni at INSEAN, Italy, Survivability and Functionality Model Tests of a Combined Wind and Wave Energy Concept - the Spar-Torus-Combination (STC), under the MariNet project, 2013-2014.
- Thomas Soulard and Dr. Aurelien Babarit at ECN, Nantes, Design, Analysis and Model Testing of a Combined Wind and Wave Energy Concept - the Semi-submersible-Flap-Combination (SFC), under the MARINA Platform Project, 2013-2014.
- Prof. Puyang Zhang and Assoc. Prof. Conghuan Le, Tianjin University, Integrated Dynamic Analysis of Floating Wind Turbines during Operation and Installation Phases, 2018-2020.
- Prof. Hongda Shi, Ocean University of China, Control of Wave Energy Converters, 2019-2021.

Industry Cooperation (*company, project and year*)

- Fred Olsen, Norway, Design and Analysis of Mooring Systems for an Individual Device and a Farm of Nine Devices of the FO3 Wave Energy Converter, under the SEEWEC project, 2009.
- Aker Solutions, Norway, Dynamic Analysis of Jacket Wind Turbine, 2010.
- ACCIONA, Spain, Modelling and Analysis of Combined Concept of Wind Turbine and Wave Energy Converter, under the MARINA Platform Project, 2012.
- Technip, France, Mooring System Design for Floating Renewable Energy Platform, under the MARINA Platform Project, 2012.
- Statoil, Norway, Numerical Simulation of Installation of 10 MW Offshore Wind Turbines, 2012-2014.
- Fred Olsen Wind Carrier, Norway, Numerical Modelling and Simulation of a Jack-up Installation Vessel during Wind Turbine Blade Installation, 2018.
- Equinor, Norway, Installation of Hywind Floating Wind Turbines Using a Floating Dock, 2018.
- Equinor, Norway, Consultancy work on assessment of floating wind turbines, 2020.
- GEDI (China Energy Engineering Group Guangdong Electric Power Design Institute), China, Consultancy work on design and analysis of floating wind turbines, 2020.

ACADEMIC EXPERIENCE

Member of Academy

- **Norwegian Academy of Technological Sciences (NTVA), since 2020.**

Member of Editorial Board for International Journals

- **Marine Structures, since 2015; associate editor, since 2018.**
- **Journal of Offshore Mechanics and Arctic Engineering, since 2017.**
- Journal of Ship Mechanics, since 2015.
- Journal of Marine Science and Application, since 2016.
- China Ocean Engineering, since 2021.
- Green Energy and Intelligent Transportation, since 2022.

Member of Academic Organization and Scientific Committee for International Congresses and Conferences

- Member of the American Society of Mechanical Engineers (ASME), since 2014.
- **International Ship and Offshore Structures Congress (ISSC), Specialist Committee V.4 Offshore Renewable Energy, 2009-2012 (member), 2012-2015 (committee chair since 2014.6), 2015-2018 (committee chair); Technical Committee II.1 Quasi-Static Response, 2018-2021 (member).**
- **European Marine Board, Working Group on Marine Renewable Energy, 2021-2022.**
- **International Conference on Ocean, Offshore and Arctic Engineering (OMAE), Scientific Committee of Structures, Safety and Reliability, since 2011.10.**

- **Co-coordinator (with Prof. Carlos Guedes Soares as the coordinator) for Honouring Symposium for Prof. Torgeir Moan at the OMAE2017 conference.**
- Wind Energy Science Conference, Theme Chairperson, 2019 and 2021.
- International Conference on Offshore Renewable Energy (CORE), Glasgow, UK, Technical Advisory Panel, 2013.9-2019.9.
- International Conference on Renewable Energies Offshore (RENEW), Lisbon, Portugal, Scientific Committee, since 2014.4.

Member of PhD Evaluation Committee

NTNU

- 2014.02, Øyvind Ygre Rogne, Numerical and Experimental Investigation of a Hinged 5-Body Wave Energy Converter, NTNU. Administrator of the committee.
- 2014.03, Erin Elizabeth Bachynski, Design and Dynamic Analysis of Tension Leg Platform Wind Turbines, NTNU. Administrator of the committee.
- 2014.11, Marit Irene Kvittem, Modelling and Response Analysis for Fatigue Design of a Semi-submersible Wind Turbine, NTNU. Administrator of the committee.
- 2017.12, Finn-Idar Grøtta Giske, Long-Term Extreme Response Analysis of Marine Structures Using Inverse Reliability Methods, NTNU. Administrator of the committee.
- 2018.04, Jan Vidar Ulveseter, Advances in Semi-Empirical Time Domain Modelling of Vortex-Induced Vibrations, NTNU. Administrator of the committee.
- 2018.11, Yugao Shen, Operational Limits for Floating Collar Fish Farms in Waves and Current, without and with Well-Boat Presence, NTNU. Administrator of the committee.
- 2018.11, Tianjiao Dai, On Shear Interaction and Friction Stresses in Flexible Pipes and Umbilicals, NTNU. Administrator of the committee.
- 2018.12, Jan-Tore Horn, Statistical and Modelling Uncertainties in the Design of Offshore Wind Turbines, NTNU. Administrator of the committee.
- 2019.06, Finn-Christian Wickmann Hanssen, Non-Linear Wave-Body Interaction in Severe Waves, NTNU. Administrator of the committee.
- 2020.05, Fredrik Mentzoni, Hydrodynamic Loads on Complex Structures in the Wave Zone, NTNU. Co-administrator of the committee.
- 2020.06, Senthuran Ravinthrakumar, Numerical and Experimental Studies of Resonant Flow in Moonpools in Operational Conditions, NTNU. Co-administrator of the committee.
- 2020.12, John Marius Hegseth, Efficient Modelling and Design Optimization of Large Floating Wind Turbines, NTNU. Administrator of the committee.
- 2021.04, Shuaishuai Wang, Design and Dynamic Analysis of a 10-MW Medium Speed Drivetrain in Offshore Wind Turbines, NTNU. Administrator of the committee.
- 2022.05, Sangwoo Kim, Nonlinear Time Domain Analysis of Deepwater Riser Vortex-induced Vibrations, NTNU. Administrator of the committee.

External PhD Assessment

- 2018.05, Gustavo-Adolfo Ruiz-Munoz, Fracture Mechanics Approach to Optimize Inspection Planning of Offshore Welds for Wind Turbines, DTU. Member of the Assessment Committee.
- 2018.09, Shun-Han Yang, Analysis of the Fatigue Characteristics of Mooring Lines and Power Cables for Floating Wave Energy Converters, Chalmers University of Technology. Opponent for the PhD defence.
- 2018.12, Vincent Leroy, Unsteady Aerodynamic Modelling for Seakeeping Analysis of Floating Offshore Wind Turbines, Ecole Centrale de Nantes. Chairman of the jury for the PhD defence.
- 2019.12, Chris Keijden, The Effect of Hydrodynamics on the Interaction between Floating Structures and Flexible Ice Floes – A Study based on Potential Theory, TU Delft. Member of the Assessment Committee.
- 2022.03, Leandro S.P. da Silva, Stochastic Analysis of Marine Renewable Energy Devices: Wave, Wind and Hybrid Systems, University of Adelaide. Member of the Assessment Committee.

Assessment of Research Proposals

- Reviewed a research project proposal for Croatian Science Foundation, 2015
- Reviewed three research project proposals for A*STAR, Singapore, 2016
- Reviewed one research project proposal for Icelandic Research Fund, 2018
- Reviewed two research project proposals for Supergen ORE Hub - Flexible Fund, UK, 2019
- Reviewed three research project proposal for EPSRC, UK, 2020, 2021
- Reviewed five research project proposals for NOWDRC, US, 2020

Assessment of Academic Positions

- Assessed one professorship for Huazhong University of Science and Technology, China, 2017
- As one of the three committee members, assessed one associate professor position for University of Stavanger, Norway, 2019
- Assessed one associate professor position for University of Exeter, UK, 2019
- Assessed two professorships for Huazhong University of Science and Technology, China, 2019
- Assessed one associate professor position for University of Bristol, UK, 2020
- Assessed two associate professor positions for South China University of Technology, China, 2020, 2021

Reviewer for International Journals, Conferences, etc.

(Stop counting from 2022. In general, review one journal paper per week.)

- Marine Structures, 2007-2021
- Renewable Energy, 2012-2021
- Ocean Engineering, 2007, 2011-2021
- Applied Ocean Research, 2015-2021
- Journal of Offshore Mechanics and Arctic Engineering, 2011-2021
- Energy Conversion and Management, 2015-2021
- Ships and Offshore Structures, 2013-2020
- Engineering Structures, 2014, 2017-2019
- Journal of Marine Science and Application, 2016-2018
- Journal of Structural Engineering, 2018
- Journal of Ocean Engineering and Science, 2015-2017
- Energies, 2014-2020
- International Journal of Fatigue, 2007, 2011, 2013, 2015;
(Structural Safety, 2008; Journal of Engineering Mechanics, 2010; International Journal of Applied Mathematics and Computer Science, 2010; Proceedings of the Institution of Mechanical Engineers, Part M: Journal of Engineering for the Maritime Environment, 2011-2012, 2017; Control Engineering Practice, 2012, 2014, 2017; Journal of Hydrodynamics (Series B), 2013; Ocean Systems Engineering, 2013; Journal of Renewable and Sustainable Energy, 2013; Proceedings of the Institute of Marine Engineering, Science and Technology, Part A: Journal of Marine Engineering and Technology, 2013; Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2013; Reliability Engineering and System Safety, 2014; Cogent Engineering, 2014; AIMS (American Institute of Mathematical Sciences) Energy, 2014; International Journal of Naval Architecture and Ocean Engineering, 2016; Structural Engineering and Mechanics, 2016; International Journal of Maritime Technology, 2017; Journal of Mechanical Engineering and Sciences, 2017)
- Reviewed papers for International Conference on Ocean, Offshore and Arctic Engineering (OMAE), 2010-2019
- Reviewed papers for International Offshore and Polar Engineering Conference (ISOPE), 2015-2019
- Reviewed papers for International Conference on Offshore Renewable Energy, Glasgow, UK, 2014, 2016
- Reviewed papers for International Conference on Renewable Energies Offshore (RENEW), Lisbon, Portugal, 2014, 2016

- Reviewed papers for International Congress of the International Maritime Association of the Mediterranean, 2013
- Reviewed abstracts and papers for WindEurope Conference, 2017
- Reviewed abstracts and papers for EWEA Conference, 2015-2016
- Reviewed papers for TORQUE conference, 2016
- Reviewed Chapters 7-8 and 12-14 in the draft version of the book ‘Stochastic Dynamics of Marine Structures’ by A. Næss and T. Moan, 2012
- Evaluated the PhD thesis ‘Dynamic Analysis and Reliability Assessment of Offshore Spar Platform’ by Mohd Umair, Indian Institute of Technology Delhi, 2012
- Evaluated the PhD thesis ‘Reliability Analysis of Offshore Structures within a Time Varying and Multivariate Environment’ by Zhang Yi, National University of Singapore, 2014.

PUBLICATIONS AND PRESENTATIONS (*H-index: 43 (Google Scholar, 2022.5, total citation of 5609); 37 (Scopus, 2022.5, total citation of 4038)*)

Doctoral Thesis

Gao, Z. (2008). *Stochastic Response Analysis of Mooring Systems with Emphasis on Frequency-domain Analysis of Fatigue due to Wide-band Response Processes*. Doctoral Thesis, Department of Marine Technology, NTNU.

Book Chapters

1. Brennan, F.P., **Gao, Z.**, Landet, E., Le Boulluec, M., Rim, C.W., Sirkar, J., Sun, L.P., Suzuki, H., Thiry, A., Trarieux, F. & Wang, C.M. (2012). Report of Specialist Committee V.4 Offshore Renewable Energy. In: Fricke, W. & Bronsart, R. (Eds.), *Proceedings of the 18th International Ship and Offshore Structures Congress (ISSC 2012)*, 2: 153-199, September 9-13, Rostock, Germany.
2. **Gao, Z.**, Bingham, H.B., Nicholls-Lee, R., Adam, F., Karmakar, D., Karr, D.G., Catipovic, I., Colicchio, G., Sheng, W.A., Liu, P.F., Takaoka, Y., Slätte, J., Shin, H.K., Mavrakos, S.A., Jhan, Y.T. & Ren, H.R. (2015). Report of Specialist Committee V.4 Offshore Renewable Energy. In: Guedes Soares, C. & Garbatov, Y. (Eds.), *Proceedings of the 19th International Ship and Offshore Structures Congress (ISSC 2015)*, 2: 669-722, September 7-10, Cascais, Portugal.
3. Cheng, Z.S., Moan, T. & **Gao, Z.** (2016). Dynamic Response Analysis of Floating Wind Turbines with Emphasis on Vertical Axis Rotors. In: Ostachowicz, W., McGugan, M., Schroder-Hinrichs, J.-U. & Luczak, M. (Eds.), *MARE-WINT - New Materials and Reliability in Offshore Wind Turbine Technology*. Springer Nature, Switzerland.
4. **Gao, Z.**, Bingham, H.B., Ingram, D., Kolios, A., Karmakar, D., Utsunomiya, T., Catipovic, I., Colicchio, G., Rodrigues, J.M., Adam, F., Karr, D.G., Fang, C., Shin, H.K., Slätte, J., Ji, C.Y., Sheng, W.A., Liu, P.F., Stoev, L. (2018). Report of Specialist Committee V.4 Offshore Renewable Energy. In: Kaminski, M.L. & Rigo, P. (Eds.), *Proceedings of the 20th International Ship and Offshore Structures Congress (ISSC2018)*, 2: 193-277, September 9-14, Liege, Belgium and Amsterdam (The Netherlands).

Journal Papers

1. Li, Y.N., **Gao, Z.** & Gu, Y.N. (2002). Benchmark Study of Tensile Coupon Test and Model Test of Ship Grounding. *Ship Engineering*, 6: 13-16 (in Chinese).
2. **Gao, Z.**, Hu, Z.Q., Gu, Y.N. & Jiang, H.T. (2003). Fatigue Analysis of the Bow Structure of FPSO. *The Ocean Engineering*, 21 (2): 8-15 (in Chinese).
3. Gu, Y.N., Hu, Z.Q. & **Gao, Z.** (2003). Numerical Simulation of Ship Collision and Grounding Accident. *Journal of Shanghai Jiao Tong University*, 37 (8): 1176-1180 (in Chinese).
4. **Gao, Z.**, Gu, Y.N. & Hu, Z.Q. (2005). Benchmark Study of Structural Impact Test. *Journal of Ship Mechanics*, 9 (2): 77-82 (in Chinese).
5. Moan, T., **Gao, Z.** & Ayala-Uraga, E. (2005). Uncertainty of Wave-induced Response of Marine Structures due to Long-term Variation of Extratropical Wave Conditions. *Marine Structures*, 18 (4): 359-382.

6. Hu, Z.Q., Gu, Y.N., **Gao, Z.** & Li, Y.N. (2005). Fast Evaluation of Ship-Bridge Collision Force Based on Nonlinear Numerical Simulation. *Engineering Mechanics*, 22 (3): 235-240 (in Chinese).
7. **Gao, Z.** & Moan, T. (2007). Fatigue Damage Induced by NonGaussian Bimodal Wave Loading in Mooring Lines. *Applied Ocean Research*, 29: 45-54.
8. Melchers, R.E., Moan, T. & **Gao, Z.** (2007). Corrosion of Working Chains Continuously Immersed in Seawater. *Journal of Marine Science and Technology*, 12 (2): 102-110.
9. **Gao, Z.** & Moan, T. (2008). Frequency-domain Fatigue Analysis of Wide-band Stationary Gaussian Processes Using a Trimodal Spectral Formulation. *International Journal of Fatigue*, 30 (10-11): 1944-1955.
10. **Gao, Z.** & Moan, T. (2009). Extreme Value Prediction of Inundation Drag Force with and without Current. *Ocean Engineering*, 36: 1244-1250.
11. Sagrilo, L.V.S., **Gao, Z.**, Næss, A. & Lima, E.C.P. (2011). A Straightforward Approach for Using Single Time Domain Simulations to Assess Characteristic Extreme Responses. *Ocean Engineering*, 37 (16): 1428-1442.
12. Dong, W.B., Moan, T. & **Gao, Z.** (2011). Long-term Fatigue Analysis of Multi-planar Tubular Joints for Jacket-type Offshore Wind Turbine in Time Domain. *Engineering Structures*, 33 (6): 2002-2014.
13. Karimirad, M., Meissonnier, Q., **Gao, Z.** & Moan, T. (2011). Hydroelastic Code-to-Code Comparison for a Tension Leg Spar-type Floating Wind Turbine. *Marine Structures*, 24 (4): 412-435.
14. Dong, W.B., Moan, T. & **Gao, Z.** (2012). Fatigue Reliability Analysis of the Jacket Support Structure for Offshore Wind Turbine Considering the Effect of Corrosion and Inspection. *Reliability Engineering & System Safety*, 106: 11-27.
15. Sagrilo, L.V.S., Næss, A. & **Gao, Z.** (2012). On the Extreme Value Analysis of the Response of a Turret-moored FPSO. *Journal of Offshore Mechanics and Arctic Engineering*, 134: 041603.
16. Muliawan, M.J., **Gao, Z.**, Babarit, A. & Moan, T. (2013). Analysis of a Two-body Floating Wave Energy Converter with Particular Focus on the Effects of Power Take-off and Mooring Systems on Energy Capture. *Journal of Offshore Mechanics and Arctic Engineering*, 135: 031902.
17. Muliawan, M.J., **Gao, Z.** & Moan, T. (2013). Application of the Contour Line Method for Estimating Extreme Responses in the Mooring Lines of a Two-body Floating Wave Energy Converter. *Journal of Offshore Mechanics and Arctic Engineering*, 135: 031301.
18. Nejad, A.R., **Gao, Z.** & Moan, T. (2013). Long-term Analysis of Gear Loads in Fixed Offshore Wind Turbines Considering Ultimate Operational Loadings. *Energy Procedia*, 35: 187-197.
19. Muliawan, M.J., Karimirad, M., **Gao, Z.** & Moan, T. (2013). Extreme Responses of a Combined Spar-Type Floating Wind Turbine and Floating Wave Energy Converter (STC) System with Survival Modes. *Ocean Engineering*, 65: 71-82.
20. Dong, W.B., Xing, Y.H., Moan, T. & **Gao, Z.** (2013). Time-domain-based Gear Contact Fatigue Analysis of a Wind Turbine Drivetrain under Dynamic Conditions. *International Journal of Fatigue*, 48: 133-146.
21. Etemaddar, M., **Gao, Z.** & Moan, T. (2014). Structural Load Analysis of a Wind Turbine under Pitch Actuator and Controller Faults. In: *Journal of Physics: Conference Series - The Science of Making Torque from Wind (TORQUE2012)*, 555: 012034.
22. Li, L., **Gao, Z.**, Moan, T. & Ormberg, H. (2014). Analysis of Lifting Operation of a Monopile for an Offshore Wind Turbine Considering Vessel Shielding Effects. *Marine Structures*, 39: 287-314.
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 77. Jiang, Z.Y., Ren, Z.R., **Gao, Z.**, Sandvik, P.C., Halse, K.H. & Skjetne, R. (2018). Mating Control of a Wind Turbine Tower-Nacelle-Rotor Assembly for a Catamaran Installation Vessel. In: *Proceedings of the 28th International Ocean and Polar Engineering Conference (ISOPE)*, June 10-15, Sapporo, Japan.
 78. Ren, Z.R., Jiang, Z.Y., Skjetne, R. & **Gao, Z.** (2018). Single Blade Installation Using Active Control of Three Tugger Lines. In: *Proceedings of the 28th International Ocean and Polar Engineering Conference (ISOPE)*, June 10-15, Sapporo, Japan.
 79. Jin, J.Z., Jiang, Z.Y., Vatne, S.R., Ren, Z.R., Zhao, Y.N. & **Gao, Z.** (2018). Installation of Pre-assembled Offshore Wind Turbine Using a Catamaran Vessel and an Active Gripper Motion Control Method. *International Conference and Exhibition on Grand Renewable Energy*; June 17-22, Pacifico Yokohama, Japan.
 80. Xu, K., Shao, Y.L., **Gao, Z.** & Moan, T. (2018). A Comparative Study of Linear and Fully Nonlinear Wave Load Effects on Floating Wind Turbines in Intermediate Water. In: *Proceedings of the 3rd International Conference on Offshore Renewable Energy (CORE)*, August 29-30, Glasgow, UK.
 81. Wu, M.N., Stefanakos, C. & **Gao, Z.** (2018). Prediction of Short-term Wind and Wave Conditions Using Adaptive Network-based Fuzzy Inference System (ANFIS) for Marine Operations. In: *Proceedings of the 3rd International Conference on Renewable Energies Offshore (RENEW)*, October 8-10, Lisbon, Portugal.
 82. Zhao, Y.N., Cheng, Z.S., **Gao, Z.** & Moan, T. (2018). Effect of Foundation Modelling of a Jack-up Crane Vessel on the Dynamic Motion Response of an Offshore Wind Turbine Blade during Installation. In: *Proceedings of the 1st International Offshore Wind Technical Conference (IOWTC2018)*, IOWTC2018-1010, November 4-7, San Francisco, USA.
 83. Pereyra, B.T., Jiang, Z.Y., **Gao, Z.**, Andersen, M.T. & Stiesdal, H. (2018). Parametric Study of a Counter Weight Suspension System for the Tetraspar Floating Wind Turbine. In: *Proceedings of the 1st International Offshore Wind Technical Conference (IOWTC2018)*, IOWTC2018-1079, November 4-7, San Francisco, USA.
 84. Cheng, Z.S., **Gao, Z.** & Moan, T. (2019). Extreme Response Analysis of an End-anchored Floating Bridge. In: *Proceedings of the ASME 38th International Conference on Ocean, Offshore and Arctic Engineering*, OMAE2019-96793, June 9-14, Glasgow, Scotland.
 85. Verma, A.S., **Gao, Z.**, Jiang, Z.Y., Ren, Z.R. & Vedvik, N.P. (2019). Structural Safety Assessment of Marine Operations from a Long-term Perspective – A Case Study of Offshore Wind Turbine Blade Installation. In: *Proceedings of the ASME 38th International Conference on Ocean, Offshore and Arctic Engineering*, OMAE2019-96686, June 9-14, Glasgow, Scotland.

86. Wu, M.N., **Gao, Z.**, Stefanakos, C. & Haver, S. (2019). Comparison of Machine-Learning Methods for Multi-Step-Ahead Prediction of Wave and Wind Conditions. In: *Proceedings of the International Conference on Time Series and Forecasting (ITISE 2019)*, September 25-27, Granada, Spain.
87. Vardaroglu, M., **Gao, Z.**, Avossa, A.M. & Ricciardelli, F. (2020). Numerical Modelling of the MIT/NREL TLP Wind Turbine and Comparison with the Experimental Results. *Journal of Physics: Conference Series – EERA Deep Sea Offshore Wind R&D Conference (DeepWind'2020)*.
88. Hong, S.H., Cheng, Z.S., **Gao, Z.**, Shao, Y.L. & Xiang, X. (2020). Effect of Damping on the Dynamic Responses of a Floating Bridge in Wind and Waves. In: *Proceedings of the 30th International Ocean and Polar Engineering Conference (ISOPE)*, October 11-16, Shanghai, China.
89. Deng, S., Li, S., Xu, Y.W., Moan, T., Fu, S.X. & **Gao, Z.** (2020). Experimental and Numerical Study of Dynamic Response of a Submerged Floating Tunnel under Current Loads. In: *Proceedings of the 30th International Ocean and Polar Engineering Conference (ISOPE)*, October 11-16, Shanghai, China.
90. Radhakrishnan, G., Han, X., Sævik, S., **Gao, Z.** & Leira, B.J. (2021). System Uncertainty Effects on the Wave Frequency Response of Floating Vessels based on Polynomial Chaos Expansion. In: *Proceedings of the ASME 40th International Conference on Ocean, Offshore and Arctic Engineering*, OMAE2021-62542, June 21-30, Virtual, Online.
91. Mehlan, F.C., Nejad, A.R. & **Gao, Z.** (2021). Estimation of Wind Turbine Gearbox Loads for Online Fatigue Monitoring Using Inverse Methods. In: *Proceedings of the ASME 40th International Conference on Ocean, Offshore and Arctic Engineering*, OMAE2021-62181, June 21-30, Virtual, Online.
92. Radhakrishnan, G., Leira, B.J., **Gao, Z.**, Sævik, S. & Gomola, A. (2022). Motion Response Prediction of Marine Vessels Based on Hydrodynamic Models Updated through On-site Measurements. In: *Proceedings of the ASME 41th International Conference on Ocean, Offshore and Arctic Engineering*, OMAE2022-78912, June 5-10, Hamburg, Germany.
93. Cao, Q., Bachynski-Polic, E., **Gao, Z.**, Xiao, L.F., Cheng, Z.S. & Liu, M.Y. (2022). Analysis of a Hybrid Mooring System Concept for a Semi-submersible Wind Turbine in Intermediate Water Depth under Operational, Extreme and Yaw Error Conditions. In: *Proceedings of the ASME 41th International Conference on Ocean, Offshore and Arctic Engineering*, OMAE2022-78666, June 5-10, Hamburg, Germany.
94. Zhao, S.J., **Gao, Z.**, Li, D.J. & Meng, X. (2022). Dynamic Property of a Floating Multi-body System for Dual Barge Float-over Operation with a Mechanical TLS (Topside Lifting System). In: *Proceedings of the ASME 41th International Conference on Ocean, Offshore and Arctic Engineering*, OMAE2022-78400, June 5-10, Hamburg, Germany.
95. Dibaj, A., Nejad, A.R. & **Gao, Z.** (2022). A Data-driven Approach for Fault Diagnosis of Drivetrain System in a Spar-type Floating Wind Turbine Based on Multi-point Measurements. Extreme Value Statistics of the Response of Offshore Fixed Wind Turbines. Poster presented at *the Conference on the Science of making Torque from Wind (TORQUE2022)*, June 1-3, Delft, the Netherlands.

Guest Lectures and Presentations

1. **Gao, Z.** (2010). *Mooring System for Wave Energy Converters*. Presentation in the EU Wavetrain2 Course: Ocean Wave Energy Fundamentals, June 28-July 8, Trondheim, Norway.
2. **Gao, Z.** (2012). *An Introduction to Offshore Renewable Energy Utilization with focus on Offshore Wind Turbines and Wave Energy Converters*. Guest Lecture at Shanghai Jiaotong University, January 5, Shanghai, China. Host: Assoc. Prof. Zhiqiang Hu.
3. **Gao, Z.** (2012). *Recent Research on Offshore Wind and Wave Energy Utilization*. Guest Lecture at PLA University of Science and Technology, January 10, Nanjing, China. Host: Prof. Xujun Chen.
4. **Gao, Z.** (2013). *Software for Integrated Dynamic Analysis of Offshore Wind Turbines*. Presentation at the MARE-WINT Opening Seminar, September 2-6, Trondheim, Norway.
5. **Gao, Z.** (2014). *Introduction and Recent Research on Offshore Wind Turbines and Wave Energy Converters*. Guest Lecture at Shandong University, January 6, Jinan, China. Host: Prof. Yong Wang.

6. **Gao, Z.** (2014). *Numerical Analysis of Combined Floating Wind Turbines and Wave Energy Converters and Its Validation against Model Test Results*. Presentation at the MARINA Training Seminar, May 28, Bilbao, Spain.
7. **Gao, Z.** (2014). *Numerical and Experimental Study of Selected Combined Concepts of Floating Wind Turbines and Wave Energy Converters in the MARINA Platform Project*. Presentation at the 1st International Conference on Renewable Energies Offshore (RENEW), November 24-26, Lisbon, Portugal.
8. **Gao, Z.** (2015). *Numerical and Experimental Study of Combined Concepts of Wind Turbines and Wave Energy Converters*. Guest Lecture at Dalian University of Technology, April 3, Dalian, China. Host: Prof. Yi Huang.
9. **Gao, Z.** (2016). *Comparative Numerical and Experimental Study of the Two Combined Concepts of Wind and Wave Energy – STC and SFC*. Guest Lecture at Harbin Engineering University, January 5, Harbin, China. Host: Prof. Liang Zhang.
10. **Gao, Z.** (2016). *Recent Research Activities on Offshore Renewable Energy at NTNU*. Presentation at the International Workshop on Ocean Renewable Energy Island 2016, January 6-7, Harbin, China.
11. **Gao, Z.** (2016). *Numerical Simulation of Marine Operations and Prediction of Operability using Response-based Criteria with an Application to Installation of Offshore Wind Turbine Support Structures – A Summary of the Recent Work at NTNU*. Presentation at the 2nd International Conference on Renewable Energies Offshore (RENEW), October 24-26, Lisbon, Portugal.
12. **Gao, Z.** (2017). *Marine Operations related to Transport and Installation of Offshore Wind Turbines*. Presentation at the Third International Conference for Innovation and Cooperation in Naval Architecture and Marine Engineering, September 7-9, Qingdao, China.
13. **Gao, Z.** (2018). *Design and Analysis of Offshore Wind Turbines*. University of Sao Paulo, School of Advanced Science on Renewable Energies, July 23-August 3, Sao Paul, Brazil.
14. **Gao, Z.** (2018). *Numerical Simulations of Marine Operations, with focus on Installation of Offshore Wind Turbines*. Presentation at the 3rd International Conference on Offshore Renewable Energy (CORE), August 29-30, Glasgow, UK.
15. **Gao, Z.** (2019). *An Introduction to Offshore Wind Turbine Technology*. Presentation at the Summer School on Naval Architecture, Ocean Engineering and Mechanics, Minhang Campus, Shanghai Jiao Tong University, July 22-August 2, 2019.
16. **Gao, Z.** (2019). *Marine Operations Related to Installation of Offshore Wind Turbines*. Presentation at the Summer School on Naval Architecture, Ocean Engineering and Mechanics, Minhang Campus, Shanghai Jiao Tong University, July 22-August 2, 2019.

Project Reports

1. **Gao, Z.**, Moan, T. & Victor, S. (2007). *Mooring System Analysis of the FO3 Wave Energy Converter, SEEWEC WP6 Report*, NTNU, November 2007.
2. **Gao, Z.**, Fan, J. & Moan, T. (2008). *Time-domain Coupled Mooring Analysis of the FO3 Wave Energy Converter, SEEWEC WP6 Report*, NTNU, November 2008.
3. Harismendy, M., Wyns, M., **Gao, Z.**, Muliawan, M.J., Nasution, F., Sævik, S. & van Leeuwen, K. (2012). *Platform Components and Moorings, MARINA Platform Project WP7 Report – D7.1*, June 2012.
4. Li, L., **Gao, Z.** & Moan, T. (2012). *Environmental Data at Five Selected Sites for Concept Comparison, MARINA Platform Project WP3 Report*, NTNU, August 2012.
5. Moan, T., **Gao, Z.** & Muliawan, M.J. (2013). *Modeling Methodology for Concept Assessment, MARINA Platform Project WP4 Report – D4.1*, NTNU, February 2013.
6. **Gao, Z.**, Moan, T., Barrios, I.M., Ardanaz, I.A., Pavon, C.L., Murphy, J., O’Sullivan, K., Wyns, M. & Macadre, L.M. (2013). *Executive Recommendations on Integrated Solutions for Ocean Energy Development, MARINA Platform Project WP3 Report – D3.5*, NTNU, May 2013.
7. Souldard, T., Babarit, A., **Gao, Z.**, Michailides, C., Luan, C.Y., Ren, N.X., Ye, X.R., Bachynski, E.E. & Moan, T. (2013). *Modeling Methodology for Refined Analysis of Selected Concepts, MARINA Platform Project WP4 Report – D4.2*, November 2013.
8. Lynch, K., Murphy, J., Souldard, T., Michailides, C., **Gao, Z.**, Wan, L. & Moan, T. (2014). *Validation of Methods, MARINA Platform Project WP4 Report – D4.4*, June 2014.

9. Soulard, T., Bourdier, S., Babarit, A., **Gao, Z.**, Michailides, C., Wan, L. & Moan, T. (2014). *Functionality Testing and Survival Testing, MARINA Platform Project WP4 Report – D4.5*, June 2014.
10. **Gao, Z.**, Wan, L., Michailides, C., Moan, T., Soulard, T., Bourdier, S., Babarit, A., O’Sullivan, K., Lynch, K. & Murphy, J. (2014). *Synthesis – Modelling and Testing: Methodology and Validation, MARINA Platform Project WP4 Report – D4.6*, June 2014.
11. Li, L., **Gao, Z.** & Moan, T. (2013). *An Overview on Transportation and Installation of Offshore Wind Turbines, Report, Statoil Project on Installation Technology of Offshore Multi-use Platform*, NTNU, September 2013.
12. Li, L., Stettner, O., **Gao, Z.** & Moan, T. (2014). *Analysis of Lifting Operation of a Jacket Foundation for 10 MW Offshore Wind Turbine, Report, Statoil Project on Installation Technology of Offshore Multi-use Platform*, NTNU, July 2014.
13. Moan, T., **Gao, Z.**, Bachynski, E.E. & Nejad, A.R. (2020). Assessment of Floating Offshore Wind Turbine Concepts. Consultancy Report for Equinor. Project Report NO.: DMT 20200601. Department of Marine Technology, NTNU.

Patents and Patent Applications

1. Moan, T., Muliawan, M.J., Karimirad, M. & **Gao, Z.** (2013). *Floating Wind Turbine with Wave Energy Converter*. WO Application 2013137744 A1, published September 19, 2013.

TEACHING AND SUPERVISION EXPERIENCE

Teaching Experience at the Department of Marine Technology, NTNU

- PhD Course - MR8206 Structural Reliability: 2008-2009, delivered one lecture (Course coordinator: Prof. Torgeir Moan).
- PhD Course - MR8207 Stochastic Methods Applied in the Analysis of Marine Structures: 2008-2009, delivered two lectures; 2010-2013, delivered six lectures (Course coordinator: Prof. Torgeir Moan).
- PhD Course - MR8503 Stochastic Methods Applied in Nonlinear Analysis of Marine Structures: 2014- , organized this course and delivered eleven lectures in each spring semester.
- MSc Course Module - Integrated Dynamic Analysis of Wind Turbines: 2014-2015, organized this course module and delivered four lectures; 2019-, delivered eight lectures (Course module coordinator: Assoc. Prof. Erin Bachynski).
- MSc Course – TMR4195 Design of Offshore Structures: 2018- , delivered nine lectures (Course coordinator: Prof. Jørgen Amdahl).

Supervision and co-supervision of Postdocs, PhD and master students

Host for post-doctoral fellows, researchers or visiting scholars at NTNU (2016-)

1. Zhiyu Jiang, Post-doctoral fellow at SFI MOVE, 2016.9-2018.8, Efficient Numerical Modeling and Analysis of Installation of Offshore Wind Turbines.
2. Konstantinos Christakos, Postdoc at SFI BLUES, 2021.11- , Numerical Simulation of Inhomogeneous and Incoherent Wave Field in Norwegian Fjords.
3. George Jagite, Postdoc at SFI MOVE, 2022.2- , Short-term Wave Forecasting.
4. Farid K. Moghadam, Postdoc in the CONWIND project, 2022.04- , Wind Farm Control Considering Power Tracking and Drivetrain Degradation.

Co-host for post-doctoral fellows, researchers and visiting scholars at NTNU (2009- , with Prof. Torgeir Moan as the main host)

1. Quentin Meissonnier, Researcher, 2009.4-2010.7, Hydrodynamic Modeling and Analysis of a Single-tension-leg Spar-type Floating Wind Turbine.
2. Constantine Michailides, Researcher, 2013.5-2016.1, Modelling and Analysis of Combined Semi-submersible Wind Turbines and Flap-type Wave Energy Converters.
3. Xiaorong Ye, Researcher, 2013.5-2014.5, Numerical Modeling and Analysis of the STC (Spar-Torus-Combination) Combined Wind and Wave Energy Concept.

4. Nianxin Ren, Post-doctoral fellow, 2013.5-2015.2, Long-term Response Analysis of Combined Wind and Wave Energy Converters.
5. Ali Nematbakhsh, Researcher, 2013.5-2015.6, Prediction of Extreme Wave Loads on Floating Wind Turbines using CFD.
6. Wei Shi, Post-doctoral fellow, 2014.3-2016.7, Ice Loads on Offshore Bottom-fixed and Floating Wind Turbines.
7. Puyang Zhang, 2016.2-2017.2, Design, Analysis and Installation of Bucket Foundations for Offshore Wind Turbines.
8. Zhengshun Cheng, 2016.7-2019.5, Modeling and Analysis of Floating Bridges.

Supervision of PhD candidates at NTNU (2016-)

1. Amrit Verma, PhD candidate at SFI MOVE, 2016.8-2020.1, Modelling, Analysis and Response-based Operability Assessment of Offshore Wind Turbine Blade Installation with Emphasis on Impact Damages. (The co-supervisor was Assoc. Prof. Nils Petter Vedvik.)
2. Mengning Wu, 2017.8-2021.10, Uncertainty of Machine Learning-Based Methods for Wave Forecast and its Effect on Installation of Offshore Wind Turbines. (The co-supervisors were Prof. Sverre Haver from University of Stavanger, Dr. Christos Stefanakos from Sintef Ocean.)
3. Ali Dibaj, 2020.12- , Detection of Wind Turbine Drivetrain Faults using Machine-learning Methods. (The co-supervisor is Assoc. Prof. Amir Nejad.)
4. Øystein Døskeland, 2022.03- , Improved Operability and Decision-making for Weather Sensitive Marine Operations. (The co-supervisors are Prof. Emer. Ove Tobias Gud from University of Stavanger, Assoc. Prof. Mostafa Paskyabi from University of Bergen.)

Co-supervision of PhD candidates at NTNU (2011- , with Prof. Torgeir Moan as the main supervisor)

1. Wenbin Dong, 2009.8-2012.12, Time-domain Fatigue Response and Reliability Analysis of Offshore Wind Turbines with Emphasis on Welded Tubular Joints and Gear Components.
2. Mahmoud Etemaddar, 2009.8-2013.6, Load and Response Analysis of Wind Turbines under Atmospheric Icing and Controller System Faults with Emphasis on Spar Type Floating Wind Turbine. (The other co-supervisors were Assoc. Prof. Martin O. L. Hansen and Prof. Mogens Blanke at DTU).
3. Made J. Muliawan, 2010.2-2014.6, Design and Analysis of Combined Floating Wave and Wind Power Facilities, with Emphasis on Extreme Load Effects of the Mooring System. (The other co-supervisor was Prof. Emer. Johannes Falnes at NTNU.)
4. Zhiyu Jiang, 2010.8-2014.10, Long-term Response Analysis of Wind Turbines with an Emphasis on Fault and Shutdown Conditions.
5. Amir Rasekhi Nejad, 2011.8-2015.8, Dynamic Analysis and Design of Gearboxes in Offshore Wind Turbines in a Structural Reliability Perspective. (The other co-supervisor was Prof. Jørn Vatn at NTNU.)
6. Lin Li, 2012.1-2016.5, Dynamic Analysis of the Installation of Monopiles for Offshore Wind Turbines.
7. Zhengshun Cheng, 2013.6-2016.6, Integrated Dynamic Analysis of Floating Vertical Axis Wind Turbines. (The other co-supervisor was Prof. Helge Aagaard Madsen at DTU.)
8. Ling Wan, 2012.1-2016.8, Experimental and Numerical Study of a Combined Offshore Wind and Wave Energy Converter Concept.
9. Wilson I. Guachamin Acero, 2013.8-2016.12, Safety Assessment of Transport and Installation of Offshore Wind Turbines.
10. Chenyu Luan, 2011.8-2018.6, Design and Analysis of a Steel Braceless Semi-submersible hull for Supporting a 5MW Horizontal Axis Wind Turbine.
11. Qinyuan Li, 2011.8- , Dynamic Response Analysis for Design of Floating Wind Turbines.
12. Mahdi Ghane, 2013.8-2014.2, 2015.1-2018.10, Fault Diagnosis of Floating Wind Turbine Drivetrain – Methodologies and Applications. (The other co-supervisor was Prof. Mogens Blanke at DTU).
13. Seongpil Cho, 2014.8-2020.1, Model-based Fault Detection and Diagnosis of a Blade Pitch System in Floating Wind Turbines.

14. Yuna Zhao, 2014.8-2019.6, Safety Assessment of Marine Operations related to Installation of Offshore Wind Turbines.
15. Kun Xu, 2015.8-2020.9, Design and Analysis of Mooring Systems for Offshore Floating Wind Turbines in Shallow Water.
16. Shi Deng, 2016.8-2020.12, Numerical Modeling and Nonlinear Hydroelastic Analysis of Floating Bridges. (The other supervisor is Prof. Shixiao Fu from SJTU.)

Co-supervision of PhD candidates at NTNU (2016-)

1. Zhengru Ren, PhD candidate at SFI MOVE, 2016.8-2019.8, Advanced Control Algorithms to Support Automated Offshore Wind Turbine Installation. (The main supervisor was Prof. Roger Skjetne.)
2. Gowtham Radhakrishnan, PhD candidate at SFI MOVE, 2019.10- , Onboard Decision Support Systems Based on Mathematical and Data-Driven Models for Predicting Vessel Responses during Marine Operations in Realistic Conditions. (The main supervisor is Prof. Bernt Leira and the other co-supervisor is Prof. Svein Sævik.)
3. Felix Christian Mehlan, 2020.9- , Digital Twin for Wind Turbine Drivetrain. (The main supervisor is Assoc. Prof. Amir Nejad.)

Supervision of exchange PhD candidates at NTNU (2017-)

1. Imanol Touzon, 2017.4-2017.6, (Exchange PhD student from University of the Basque Country), Mooring System Design and Analysis for Wave Energy Converters.
2. Xiaoqi Qu, 2017.10-2018.9, (Exchange PhD student from Tianjin University), Modeling of Rotor Blades Considering Geometrical Nonlinearities and Application for Floating Wind Turbines.
3. Liang Li, 2018.7-2018.9, (Exchange PhD student from University of Strathclyde), Neural Network-based Controller for Maximization of Power Absorption of Wave Energy Converters.
4. Mustafa Vardaroglu, 2019.8-2019.12, (Exchange PhD student from University of Campania 'Luigi Vanvitelli'), Numerical and Experimental Comparison of TLP Floating Wind Turbines.
5. Xiaochen Dong, 2019.8-2020.8, (Exchange PhD student from Ocean University of China), Model Testing and Control of Wave Energy Converters.
6. Xinkuan Yan, 2020.1-2021.1, (Exchange PhD student from South China University of Technology), Numerical Modelling and Experimental Study of Floating Wind Turbines.
7. Qun Cao, 2020.1-2022.3, (Exchange PhD student from Shanghai Jiao Tong University), Numerical Analysis and Experimental Study of a Novel Semi-submersible Floating Wind Turbine.
8. Shujie Zhao, 2020.1- , (Exchange PhD student from Ocean University of China), Numerical Simulation of Non-stationary and Nonlinear Float-over Marine Operations.

Co-supervision of exchange PhD candidates at NTNU (2011-2017, with Prof. Torgeir Moan as the main supervisor)

1. Stefano Parmeggiani, 2011.8-2011.11, (Exchange PhD student from Aalborg University), Mooring System of Wave Dragon.
2. Andrew Stephen Zurkinden, 2012.8-2013.2, (Exchange PhD student from Aalborg University), Fatigue Analysis of Wave Energy Converter - Wave Star.
3. Cheng Li, 2012.8-2014.8, (Exchange PhD student from Harbin Institute of Technology), Marine Operations with Floating Crane – Coupling Floater and Crane Behavior.
4. Wenhua Wang, 2015.10-2016.12, (Exchange PhD student from Dalian University of Technology), Numerical and Experimental Study on Dynamic Responses of Offshore Wind Turbines under Seismic Excitations.
5. Xiaoxian Guo, 2016.9-2017.8, (Exchange PhD student from Shanghai Jiao Tong University), Experimental and Numerical Study of a Floating Tidal Current Turbine.

Supervision of master students at NTNU (2013-)

(Stop listing all the names of the master students from 2017. Typically, 4-8 master students per year.)

1. Qiang Wang, 2013.8-2014.6, EWEM, Design of a Steel Pontoon-type Semi-submersible Floater Supporting the DTU 10MW Reference Turbine.

2. Oliver Stettner, 2013.8-2014.6, EWEM, Numerical Simulation for Installation of Jacket Foundation of Offshore Wind Turbines.
3. Xing Zheng, 2013.8-2014.6, Nordic Master's Program, Response and Structural Analysis of a Flap-type Wave Energy Converter in a Combined Wind and Wave Concept.
4. Bas Verheugt, 2013.8-2014.11, EWEM, Efficient Response Simulation Strategies for Jacket-based Offshore Wind Turbines – An Integrated Approach Combining Model Reduction and Nonlinear Wave Theory.
5. Marine Saccoman, 2014.8-2015.6, Nordic Master's Program, Coupled Analysis of a Spar Floating Wind Turbine considering both Ice and Aerodynamic Loads. **(Best Poster Award at IMT/NTNU).**
6. Md Touhidul Islam, 2015.8-2016.6, Design, Numerical Modeling and Analysis of a Semi-submersible Floater Supporting the DTU 10MW Wind Turbine.
7. Xiaoshuang Tian, 2015.8-2016.6, Design, Numerical Modeling and Analysis of TLP Floater Supporting the DTU 10MW Wind Turbine.
8. Wenfei Xue, 2015.8-2016.6, Design, Numerical Modeling and Analysis of a Spar Floater Supporting the DTU 10MW Wind Turbine.
9. Shi Deng, 2015.8-2016.6, Numerical Simulations for Lift-off Operation of an Offshore Wind Turbine Monopile.
10. Dapeng Xu, 2015.8-2016.6, Numerical Modeling and Simulations for Lowering of an Offshore Wind Turbine Tripod.
11. Fride M. Birkeland, 2015.8-2016.8, Numerical Simulation for Installation of XL Monopile for Offshore Wind Turbine. (Co-supervisor: Prof. Bernt J. Leira.)
12. Md Rafiur Rahman, 2015.8-2016.7, Numerical Modeling and Analysis of the Combined Wind and Wave Energy Concept SFC.
13. Peng Ai, 2015.8-2016.6, Nordic Master's Program, Design and Hydrodynamic Analysis of a Semi-submersible with Two 5MW Wind Turbines.
14. Haobin Liu, 2015.8-2016.6, Stress Analysis of the Structural Interface between the Spar and the Torus in the Combined Wind and Wave Energy Concept STC.
15. Nishat Al Nahian, 2015.8-2016.6, Structural Analysis of the Gripper Connection during Monopile Installation.
16. Kristine B. Riste, 2015.8-2016.6, Development of a Frequency-domain Model for Dynamic Analysis of the Floating Wind Turbine Concept – WindFloat. (Co-supervisor: Dr. Karl Merz.)
17. Efstathios Tsigkris, 2015.8-2016.7, EWEM, Dynamic Response Analysis of a Spar Floating Wind Turbine in Level Ice with Varying Thickness.
18. Boy Solo Koppenol, 2015.8-2016.9, EWEM, Dynamic Analysis of a Floating Vertical Axis Wind Turbine using the Actuator Cylinder Flow Theory – Comparative Study on a Land-based versus Spar Vertical Axis Wind Turbine Concept and a Code-to-code Comparison.
19. Marius B. Maastad, 2016.1-2016.12, Numerical and Experimental Study of the Fred Olsen Wind Turbine Concept.
20. Sunghun Hong, 2018.8-2019.6, Nordic Master's Program, The Effect of Damping on the Dynamic Responses of a Floating Bridge in Wind and Waves. **(Best Poster Award at IMT/NTNU).**

Co-supervision of master students at NTNU (2007-2015, with Prof. Torgeir Moan as the main supervisor)

1. Julien Lardier, 2007.8-2007.12, (Internship, exchange master student from Institut Francais de Mecanique Avancee (IFMA)), Fatigue Reliability of Corroded Mooring Chains.
2. Peng Li, 2009.8-2010.6, Ultimate Strength Analysis of Offshore Jacket Wind Turbines.
3. Thomas Solberg, 2010.8-2011.6, Dynamic Response Analysis of a Spar Type Floating Wind Turbine.
4. Chenyu Luan, 2010.8-2011.6, Dynamic Response Analysis of a Semi-submersible Floating Wind Turbine.
5. Jon Erik Lygren, 2010.8-2011.6, Dynamic Response Analysis of a Tension-leg Floating Wind Turbine.
6. Yu Li, 2011.2-2011.6, Dynamic Response Analysis of an Offshore Wind Turbine.

7. Thomas Tarrerias, 2011.8-2011.12, (Internship, exchange master student from Institut Francais de Mecanique Avancee (IFMA)), Fatigue Analysis of Transition Piece for Offshore Jacket Wind Turbines.
8. Ørjan Fredheim, 2012.1-2012.6, Fatigue Analysis of Column-Brace Connection in a Semi-submersible Wind Turbine.
9. Camilla Eikeland Andersen, 2011.8-2012.6, Numerical Simulation for Installation of Offshore Monopile Wind Turbines.
10. Rui Zhang, 2013.1-2013.6, Comparative Study on Dynamic Responses of a Semi-submersible Wind Turbine Using a Simplified Aerodynamic Model and a BEM Model.
11. Marius Deac, 2013.8-2014.6, EWEM, Design and Analysis of a Large Wind Floater – A Reinforced Concrete Pontoon-type Semi-submersible Supporting the DTU 10MW Reference Turbine.
12. Traian I. Marin, 2013.8-2014.6, EWEM, Fatigue Analysis of the Column-pontoon Connection in a Semi-submersible Floating Wind Turbine.
13. Marvin Bense, 2013.7-2014.6, Comparison of Numerical Simulation and Model Test for Integrated Installation of GBS Wind Turbines.
14. Gian Paolo, 2014.3-2015.3, (Exchange student from University of Genova), Spectral-based Fatigue Analysis for Typical Side-shell Longitudinal Stiffeners Joints of FPSO.
15. Kun Xu, 2014.8-2015.6, Design and Analysis of Mooring System for Semi-submersible Floating Wind Turbines in Shallow Water.

SCHOLARSHIPS, AWARDS AND HONORS

- 'Three-A' Student, Shanghai Jiao Tong University, 1997, 1998 and 1999
- First Prize of Renmin Scholarship, Shanghai Jiao Tong University, 1997, 1998 and 1999
- Lloyd's Register of Shipping Scholarship, Shanghai Jiao Tong University, 1998, 1999 and 2000
- Shanghai Excellent Graduate, 2000
- **'Three-A' Model Student, Shanghai Jiao Tong University, 2001**
- Yangyou Scholarship, Shanghai Jiao Tong University, 2001
- PhD Fellowship, CeSOS, NTNU, 2003-2008
- **ExxonMobil Research Prize for one of the two best doctoral theses in applied research among 268 doctoral graduates at NTNU, May 2008**
- Post-doctor Fellowship, CeSOS, NTNU, 2008-2011
- Best Reviewer Award 2014 (Journal of Renewable Energy), February 2015
- **ISSC 2015 Award, September 2015**
- **OMAE Conference Appreciation Award, June 2017**
- **Elected Member of NTVA (Norwegian Academy of Technological Sciences), 2020**