

FANGXU SUN MSc, BEng
NAVAL ARCHITECT

National University of Singapore, Master of Science, Offshore Technology 2013

National University of Singapore, Bachelor of Mechanical Engineering, 2012

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Fangxu is a naval architect at Solis Marine Engineering Pte Ltd, the engineering division of the Solis Marine Group, providing engineering, design and analysis services to the offshore and maritime, renewables industries and green shipping.

Fangxu's work includes hydrodynamic analysis, stability analysis, mooring strength and fatigue analysis, offloading analysis, riser and umbilical analysis, engineering design, project management and planning. He has delivered many challenging large-scale permanent installation projects and FPSO mooring system design and installation projects.

Upon graduating with a Master of Science in Offshore Technology in 2013 from the National University of Singapore, he then worked as a Naval Architect at PAPE Engineering for six years and has extensive knowledge of mooring system design for FSO / FPSO and derrick barges, SURF (subsea umbilicals, risers and flowlines) installation, structural design, pipe laying design and dynamic position system design.

In 2019 Fangxu joined London Marine Consultants Asia Pacific where he worked extensively in design, engineering, project management and interface roles for mooring and riser designs for FPSO and offshore installation projects, which include numerous technically challenging projects in the deep water and tropical storm regions. This work involved project management, mooring and riser system design, stability analysis, offloading availability analysis, cost estimation, and scope of work definition.



EMPLOYMENT HISTORY

SOLIS MARINE ENGINEERING PTE LTD., SINGAPORE, 2022 – PRESENT

Green Fuel Vessel Conversion Projects

- Stability analysis for vessel conversion.

MARINE CONSULTANT ASIA PACIFIC, SINGAPORE, 2019 – 2022

World Carrier Corporation – Etame FSO Project

- Basis of design for the mooring system.
- Mooring strength and fatigue analysis for the spread mooring system of the FSO.
- Hydrodynamic, motion and green water analysis for the FPSO.

Oil Search – Turret Pre-FEED

- Definition of the scope of work, responsibilities, controls and coordination procedures for contractors of the FSO turret mooring system in the FEED phase.

EXMAR – Leviathan FLNG Phase2

- Hydrodynamic and motion analysis for the FLNG.

Yinson – Atlanta 2 FPSO (Water Depth 1540m)

- Liaise with client as interface engineer.
- Mooring strength analysis for the spread mooring system of the FPSO.
- Static and dynamic riser and umbilical analysis for the FPSO.
- Availability analysis for the offloading operation.

World Carrier Corporation – Okwok FPSO Project

- Client liaison as interface engineer.
- Mooring strength analysis for the spread mooring system for FPSO.
- Hydrodynamic, motion and green water analysis for FPSO.

TK-Ocyan – FPSO Pioneiro de Libra (Water Depth 1920m)

- Mooring fatigue analysis for the external turret mooring system of the FPSO.
- QA of the mooring strength analysis.

ICON – Barge Mooring and Motion Analysis

- Stability, hydrodynamic and motion analysis for barge.

- Mooring strength analysis for the barge during installation, for both operational and stand-off position.

SHIPLOAD – FSU Mooring Study.

- Project management and planning.
- Client liaison as interface engineer.
- Mooring strength analysis and anchor pattern selection and optimisation.

TYLin – Proposed Condominium Development at Harbourfront Avenue (Plot 4)

- Project management and planning.
- Client liaison as interface engineer.
- Stability analysis for concrete floating swimming pool.
- Frequency domain motion analysis for concrete floating swimming pool.

TYLin – Innovative Mooring Solutions for the Optimisation of Sea Space at Anchorages in Singapore

- Project management and planning
- Client liaison as interface engineer.
- Compartmentalisation and stability analysis for floating deck.
- Motion and green water analysis for floating deck.
- Mooring strength and berthing analysis for side-by-side FSRUs and floating deck.

Vires – Batangas LNG Terminal Mooring System

- Preliminary mooring strength analysis for internal column turret mooring system.

HBA – Nam Du Turret Mooring System

- Mooring strength analysis and mooring system selection between spread mooring system and turret mooring system.
- Cost estimation for different mooring system.

MVOT – FSO Orkid

- Hydrodynamic assessment for loading condition and calibrate the roll damping based on the RAOs provided by client.
- QA of mooring strength analysis.

Cortez – FPSO Berantai

- Riser system verification for the newly installed riser.
- Review and QA of the Fibre Optic Cable installation analysis.

DRL – Husky FPSO

- Review and quality assurance for green water analysis.

OMNI – FSO Erawan

- Mooring strength analysis for detailed strength design of the external cantilever mooring system.

PAPE ENGINEERING PTE LTD, 2013 – 2019

ONGC – Pipeline Replacement Project-4 / Daman Development Project / C-26 Cluster Pipeline Project

- Lead structural design for riser/l-tube clamps including design and material selection for all plates, stiffener, stubs and bolts & stress and feasibility check. Supervision of drafting of clamp detailed drawings.
- Material-take-out (MTO) for procurement for clamp fabrication.
- Liaison with fabrication yard during fabrication of all clamps to provide technical support to ensure the fabricated clamps are in line with the design and validation the alteration request raised by the fabrication yard.

KRIS Energy – Wassana Field Development, EPC of Calm Buoy & Associated Mooring System

- Mooring strength and fatigue analysis, and anchor pattern preparation for SPM system including DOC, DEC and offloading conditions.

PETRONAS – SK316 Development Project

- Mooring strength analysis and anchor pattern preparation for jacket upending and topside lifting operations in operational and survival conditions.
- Anchor deployment procedure for topside float over operation.

MISC – Provision of Engineering, Supply and Delivery of One Calm Buoy for Underbalance Drilling (UBD) Campaign

- Mooring strength analysis and anchor pattern preparation for SPM system including DOC, DEC and offloading conditions, heading and weather vaning restriction analysis.

OMNI – NONG YAO Field Development, FSO Supply of Calm Buoy with Associated Mooring System

- Mooring strength analysis and anchor pattern preparation for SPM system including DOC, DEC and offloading conditions.

PTSC – Su Tu Field Development

- Mooring strength analysis and anchor pattern preparation for pipelay activities from start-up to lay-down including operational and survival conditions, and for various lifting analysis including spools, expansion loops, riser guard and topsides.

ConocoPhillips – South Belut Project

- Mooring strength analysis and anchor pattern preparation for semi-submersible Safe Astoria as accommodation barge including operational and survival conditions.

Swiber – Kaizen 4000 Upgrading Project

- Mooring strength analysis for Kaizen 4000 for upgrading propose.

PEMEX – Transportation and Installation Engineering for SINAN Project

- Mooring strength analysis and anchor pattern preparation for pipelay activities from start-up to lay-down, and for spool lifting.

Shell – Champion Water Flood Project

- Structural design for dropped objects protection system including energy absorption, frame integrity, on-bottom stability and cathodic protection.

SOFTWARE SKILLS

Hydrodynamic Analysis	Diodore, Hydrostar
Mooring Analysis	Ariane 7/8
Dynamic Finite Element Analysis	Deelines, OrcaFlex
Dynamic Positioning Analysis	ShipX
Stability Analysis	Autohydro, GHS

EMPLOYMENT HISTORY

2022 to Present	Solis Marine Engineering Pte. Ltd. Singapore Naval Architect
2019 to 2022	London Marine Consultants Asia Pacific, Singapore Naval Architect
2013 to 2019	PAPE Engineering Pte. Ltd., Singapore Naval Architect