


PERSONAL INFORMATION



Zohreh Sarichloo

 [Redacted Address]  
 [Redacted Phone]  
 [Redacted Email]  
 [Redacted DOB] [Redacted Nationality]

SUMMARY

Experienced researcher with a PhD in supply chain modelling for offshore wind industry. Strong background in Discrete Event Simulation (DES), risk analysis, and production system optimization. Skilled in developing robust supply chains to address uncertainties like weather, supply disruptions, manufacturing process variabilities, and resource constraints. Extensive experience in hydrokinetic turbine design, analysis, and optimization, supported by published research on marine current systems. Proficient in turbine performance evaluation and Computational Fluid Dynamics (CFD) simulations. Strong programming and data analysis skills in Python, Matlab, and Fortran.

PROFESSIONAL EXPERIENCE

Research Fellow (October 2024 – current)

**Queen's University Belfast**, school of Mechanical and Aerospace Engineering, UK  
**Wright Technology & Research Centre (W-Tech)**, Belfast, UK

- Designing a robust supply chain for the bus industry utilizing DES.

Teaching Assistant (2022 – 2023)

**Queen's University Belfast**, school of Mechanical and Aerospace Engineering, UK

- PGR Teaching Assistant: Aircraft Performance, Math 1, Laboratory classes
- Mentoring one PhD student

Industrial Internship (2022)

**Gavin & Doherty Geo-solutions (GDG)**, Belfast, UK

- Carried out visits to Irish ports and conducted feasibility assessments of ports for the offshore wind industry.
- Engaged with port operators and offshore wind developers to assess the port infrastructure needs for the construction and installation of offshore wind turbines.
- Contributed as a co-author to the "Irish National Port Study Report" published in 2022.

Scholarship / Research assistant (2017 – 2022)

**CNR-INM** Marine Technology Research Institute of Rome, Italy

- Design and development of a model marine current turbine for experimental research.
- Numerical hydrodynamic analysis of marine turbines by in-house developed Boundary Element Method.
- CFD investigation on the hydrodynamic behaviour of wells turbines (OpenFoam).

Internship – Master Thesis (2016 - 2017)

**CNR-INM** Marine Technology Research Institute of Rome, Italy

- Collaboration with the researchers of the institute to develop a fast and accurate computational model for the hydrodynamic analysis of marine current turbines.

EDUCATION

PhD in Mechanical Engineering (Final exam successfully passed in September 2024, see attached letter)

Queen's University Belfast, school of Mechanical and Aerospace Engineering, Belfast, UK  
**Thesis:** " Modelling strategies to investigate the impact of variability in construction and installation of floating wind turbines: a focus on the base ports".

M. Sc. in Energy Systems Engineering, **grade 110/110** (10/2013 - 01/2017)

University of Rome "La Sapienza", faculty of Civil and Industrial Engineering, Rome, Italy

**Thesis:** "A Generalised Boundary Element Method to Analyse Marine Current Turbine Hydrodynamics Including Flow Separation and Stall".

**Principle materials studied:**

Fluid-dynamics, Advanced systems for energy conversion, Power plant thermodynamics, Electrical machines, Mechanical and thermal measurements, Air conditioning, Risk analysis.

B. Sc. (2<sup>nd</sup>) in Energy Systems Engineering, **grade 101/110** (10/2008 - 11/2013)

University of Rome, "La Sapienza", faculty of Civil and Industrial Engineering, Rome, Italy

**Thesis:** "Ocean Wave Energy Converters"

**Principle materials studied:**

Mathematical analysis, Geometry, Physics, chemistry, Electrotechnics, Electrical power plants, thermodynamics of machines, Mechanics of solids, Design and construction of machines, Heat transfer, Energy systems.

B. Sc. (1<sup>st</sup>) in applied Mathematics (10/2004 - 07/2008)

Azad University of Karaj, Karaj, Iran

**Principle materials studied:**

Mathematics, Mathematical analysis, Numerical analysis, Algebra, Physics, Computer programming (Pascal, C, C++), Statistics, Computer simulation, Random processes.

PERSONAL COMPETENSES

LANGUAGES

	COMPREHENSION		SPEAKING		WRITING
	Listening	Reading	Interaction	Oral production	
Persian	Native	Native	Native	Native	Native
Italian	C2	C2	C2	C2	C2
English	C2	C2	C2	C2	C2
Turkish	C1	B2	B1	B1	A2
Arabic	A2	A2	A1	A1	A1

SKILLS

- Supply chain modelling
- Discrete Event Simulation (DES)
- Uncertainty analysis in the supply chain (risk assessment)
- Modelling & optimisation of production systems
- Programming: Python, Matlab, C/C++, Fortran
- Data analysis (Statistical & Descriptive)
- HPC
- CFD software (OpenFoam, X-Foil, BEM)

**COMMUNICATION SKILLS**

- Excellent communication skills developed in the multicultural atmosphere
- High ability to work effectively in a team to achieve common goals
- Strongly motivated, determined and patient to achieve optimal results
- Display positive, friendly and competitive attitudes
- Make positive use of stress to improve performance

**OTHER COMPETENCES**

- Winner of “scholarship - Borsa di collaborazione” for 4 years in laboratories of engineering faculty of university of Rome “La Sapienza” (2012-2016)
- Winner of Laziodisu scholarship for 7 years during academic studies in university of Rome “La Sapienza” (2008-2016)

**OTHER INFORMATION****ARTICLES**

- Sarichloo, Z., Murphy, A., Butterfield, J., & Hannigan, P., “Modelling methods to evaluate the impact of process variability on the performance of semi-submersible floating wind turbine construction and installation projects.” (manuscript in preparation for submission to Ocean Engineering).
- Sarichloo, Z., Murphy, A., Butterfield, J., & Hannigan, P., “Modelling techniques to explore the impact of weather and process variability on the performance of semi-submersible floating wind turbine construction and installation projects”. (manuscript in preparation for submission to Renewable Energy).
- Willden, R.H.J., et al, 2023. “Tidal turbine benchmarking project: Stage I-Steady flow blind predictions” for “The 15<sup>th</sup> European Wave and Tidal Energy Conference, EWTEC 2023, 3<sup>rd</sup> – 7<sup>th</sup> September 2023, Bilbao, Spain.
- Sarichloo, Z., Ghorbanpour, P. and Salvatore, F., 2022. “Horizontal-axis tidal turbine design based on 3D hydrodynamics”. International Marine Energy Journal, 5(1), pp.77-90. DOI: <https://doi.org/10.36688/imej.5.77-90>
- Sarichloo, Z., Murphy, A., Butterfield, J., Doran, J., Hannigan, P. and Desmond, C., 2022, June. Investigating the Impact of Disruptive Events on the Fabrication and Installation Processes for a Floating Offshore Wind Farm. In International Conference on Offshore Mechanics and Arctic Engineering (Vol. 85932, p. V008T09A036). American Society of Mechanical Engineers.
- Dubioso, G., Salvatore, F., Sarichloo, Z., Calcagni, D., Muscari, R., “Comparative analysis of variable-fidelity CFD models for horizontal-axis tidal turbine” for “Third European Wave and Tidal Energy Conference, EWTEC 2019, Napoli, Italy, September 2019”.
- Sarichloo, Z., Rafiei, M., Giullii Capponi, F., Salvatore, F., “Hydrodynamics, PTO and control design of a horizontal-axis model turbine for experimental research” for “7th Oxford Tidal Energy Workshop, OTE2019, 8th-9th April, 2019, Oxford, United Kingdom”.
- Sarichloo, Z., Salvatore, F., Di Felice, F., Costanzo, M., Starzmann, R., Frost, C., “Computational analysis and experimental verification of a Boundary Integral Equation Model for tidal turbines” for “Third International Conference on Renewable Energies Offshore, RENEW 2018, Lisbon, Portugal, October 2018”.
- Salvatore, F., Sarichloo, Z., Calcagni, D., “Marine Turbine Hydrodynamics by a Boundary Element Method with Viscous Flow Correction” published on “Journal of Marine Science and Engineering, jmse”, 2018. DOI: <https://doi.org/10.3390/jmse6020053>
- Salvatore, F., Calcagni, D., Sarichloo, Z., “Development of a hybrid viscous/inviscid hydrodynamics model for marine current turbines”, for “Twelfth European Wave and Tidal Energy Conference, EWTEC 2017, Cork, Ireland, August 2017”.

## CONFERENCE

- Salvatore, F., Sarichloo, Z., Calcagni, D., "A Generalised Boundary Element Method to Analyse Marine Current Turbines Hydrodynamics Including Flow Separation and Stall" for "Fifth International Symposium on Marine Propulsors, smp'17, Espoo, Finland, June 2017".
- Presentation in "ASME 2022 41st International Conference on Ocean, Offshore and Arctic Engineering (OMAE), Hamburg, Germany, June 2022" by me for "Investigating the Impact of Disruptive Events on the Fabrication and Installation Processes for a Floating Offshore Wind Farm."
- Presentation in "Third European Wave and Tidal Energy Conference, EWTEC 2019, Napoli, Italy, September 2019" by me for the "Dubioso, G., Salvatore, F., Sarichloo, Z., Calcagni, D., Muscari, R., "Comparative analysis of variable-fidelity CFD models for horizontal-axis tidal turbine".
- Presentation in "Third International Conference on Renewable Energies Offshore, RENEW 2018, Lisbon, Portugal, October 2018" by me for the "Sarichloo, Z., Salvatore, F., Di Felice, F., Costanzo, M., Starzmann, R., Frost, C., "Computational analysis and experimental verification of a Boundary Integral Equation Model for tidal turbines".
- Presentation in "Ninth European Seminar on Offshore Wind and other Marine Renewable Energies in Mediterranean and European Seas, OWEMES 2017, Bari, Italy, October 2017" by me for the "Sarichloo, Z., Salvatore, F., "A simple viscous-flow correction model for marine turbine hydrodynamics by a Boundary Element Method".

## POSTER

- Sarichloo, Z., Murphy, A., Butterfield, J., Doran, W.J., Hannigan, P. and Desmond, C., 2022, "Modelling port and offshore installation operations for floating wind farms". Poster presentation in the 2022 Annual Wind Energy Ireland Conference.
- Salvatore, F., Calcagni, D., Ghorbanpour, P., Rafiei, M., Sarichloo, Z., 2022. "Tidal tools - a digital modelling environment for the hydrodynamic analysis and design of hydrokinetic turbines." Poster presentation in the ICOE-OEE 2022 Conference, Basque country, Spain 18 - 20 October.

## TECHNICAL REPORTS

- Gibson, S., O'Loan, D., Podipara, G. S., Zawada, K., Brown, W., Sarichloo, Z., Desmond, C., 2022, "Irish National Ports Study 2022". DOI: <https://zenodo.org/records/7101066>.
- "Hydrodynamic performance measurements of Schottel Hydro model turbine", CNR-INSEAN Report 2017.
- "Computational modelling of tidal turbine performance: "the Schottel Hydro SIT250 test case", CNR-INSEAN Report 2018.

## INTERESTS

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Sports, Trekking, Hiking, Travelling, Reading, Cooking, Dancing, Music, Cinema

