

SAEED NAJAFI

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ASSISTANT PROFESSOR, IRANIAN NATIONAL INSTITUTE OF OCEANOGRAPHY

EDUCATION

SEPTEMBER 2017

PHD, NAVAL ARCHITECTURAL ENGINEERING, SHARIF UNIVERSITY OF TECHNOLOGY

Developing a numerical method based on nonlinear boundary integral equations including free wake sheet alignment for unsteady flow simulation around deformable geometries

FEBRUARY 2010

MSC, NAVAL ARCHITECTURAL ENGINEERING, SHARIF UNIVERSITY OF TECHNOLOGY

Numerical simulation of multiphase free surface flows with Navier-Stokes equations and volume of fluid (VOF) method over unstructured grids for modelling of floating body motions

SEPTEMBER 2005

BSC, NAVAL ARCHITECTURAL ENGINEERING, SHARIF UNIVERSITY OF TECHNOLOGY

Experimental investigation of the effect of pontoons transverse distance in wave making resistance of a SWATH Vessel

INTERESTS

- Computational Fluid Dynamics
- Marine Hydrodynamics and Propulsion
- Underwater Acoustics
- Wave Energy Converters

PROFESSIONAL EXPERIENCE

2016 – 2018

R&D EXPERT, ASIA CLASSIFICATION SOCIETY (ACS)

- Development of Rules, Regulations and Class Survey Procedures
- Consultancy to Naval Architectures and Marine Engineers
- Research on Innovative Technologies in Marine Industries

2007 – 2016

ENGINEERING DEPARTMENT, MARINE INDUSTRIAL ORGANISATION

- Shaft Alignment Calculation including Whirling and Torsional Vibrations
- Design and Execution of a Hydraulic Pitch Feedback Mechanism for CP Propeller
- Marine Propeller Design and Analysis (Hydrodynamics and Structural)
- Matching of Engine with Propeller

2005 – 2007

ENGINEERING DEPARTMENT, SADRA SHIPBUILDING CO., NEKA SHIPYARD

- Detail Design Process of three AHTS and AMIRKABIR Semi-Submersible Drilling Unit
- Mooring procedure plan for AMIRKABIR Semi-Submersible Drilling Unit
- Produce Inclining Test Procedure

ACADEMIC EXPERIENCE

2020 – NOW

ASSISTANT PROFESSOR, IRANIAN NATIONAL INSTITUTE OF OCEANOGRAPHY

- Technical Manager and DPA of Persian Gulf Explorer Research Vessel
- Head of Liaison with Industry Division

2018 – 2020

PART TIME LECTURER, ISLAMIC AZAD UNIVERSITY

- Computational Fluid Dynamics
- Thermodynamics
- Mechanics of Fluids
- Design of Machine Components
- Automatic Control
- Engineering Dynamics

2008 – 2012

RESEARCH ASSISTANT, MARINE ENGINEERING LABORATORY, SHARIF UNIVERSITY

- Test of Propellers in Cavitation Tunnel and Generate Performance Curves
- Calibration of Dynamometer of Cavitation Tunnel and Towing Tank Carriage
- CFD with OpenFOAM and Star-CCM+ to evaluate [Propeller](#) and [Vessel Performance](#)
- Design, manufacturing and towing test of small-scale models
- Experimental investigation of the effect of pontoons transverse distance in wave making resistance of a SWATH Vessel
- Developing a software for design and analysis of propeller and turbine using combined boundary element and lifting surface methods
- Estimation of natural frequencies of rotary equipment using smart phone accelerometer sensor via developing an Android application and embedded FFT analysis

PUBLICATIONS

- Najafi, S., Pourmostafa, M., Liu, P.F., "Coupling of RANS and BEM solvers for simulation of propeller behind the hull in full appended model", 2024, China Ocean Eng., 38(3):424–438
- S. Najafi, M. Pourmostafa, "Investigating the Performance of Twin Marine Propellers in Different Ship Wake Fields Using an Unsteady Viscous and Inviscid Solver", Journal of Marine Science and Application 21 (2), 92-105
- Saeed Najafi, Behrouz Abtahi, "Numerical simulation of aquatic animals locomotion using unsteady panel method", Ocean Engineering 244 (2022): 110380
- Abbaspour, Madjid, and Saeed Najafi. "Developing three dimensional potential solver for investigation of propulsion performance of rigid and flexible oscillating foils." Ocean Engineering 147 (2018): 121-31.
- Ghadimi, Parviz, Abbas Dashtimanesh, Mohammad Farsi, and Saeed Najafi. "Investigation of free surface flow generated by a planing flat plate using smoothed particle hydrodynamics method and FLOW3D simulations." Proceedings of the Institution of Mechanical Engineers, Part M: Journal of Engineering for the Maritime Environment 227, no. 2 (2013): 125-35.
- Ghadimi, Parviz, Mehdi Pourmostafa, and Saeed Najafi. "Investigating the Response Amplitude Operator of a Heaving Pontoon under the Influence of a Submerged Trapezoidal Breakwater." Advances in Civil Engineering 2020 (2020).
- Najafi, Saeed, and Madjid Abbaspour. "Numerical investigation of flow pattern and hydrodynamic forces of submerged marine propellers using unsteady boundary element method." Proceedings of

the Institution of Mechanical Engineers, Part M: Journal of Engineering for the Maritime Environment 233, no. 1 (2019): 67-79.

- Najafi, Saeed, and Madjid Abbaspour. "Numerical study of propulsion performance in swimming fish using boundary element method." Journal of the Brazilian Society of Mechanical Sciences and Engineering 39, no. 2 (2017): 443-55.
- Najafi, Saeed, and Pengfei Liu. "Propulsion Performance of Spanwise Flexible Wing Using Unsteady Panel Method." Journal of Ocean University of China 19 (2020): 505-18.
- Rostamani, M, S Najafi, E Amini, and M Gorji. "Numerical study of turbulent forced convection flow of Al2O3 nano-fluid in the tube considering variable properties." Journal of hydrodynamics, Ser. B 37, no. 10 (2013): 1426-31.
- Tavakoli, Sasan, Saeed Najafi, Ebrahim Amini, and Abbas Dashtimanesh. "Performance of high-speed planing hulls accelerating from rest under the action of a surface piercing propeller and an outboard engine." Applied Ocean Research 77 (2018): 45-60.
- Tavakoli, Sasan, Saeed Najafi, Ebrahim Amini, and Abbas Dashtimansh. "Ship acceleration motion under the action of a propulsion system: a combined empirical method for simulation and optimisation." Journal of Marine Engineering & Technology (2020): 1-16.
- Computational fluid dynamics using Flow3D™, Saeed Najafi, Andisheh Sara Publications, 2013, ISBN 978-600-5716-81-8

HONORS

- Software Patent, *PANEL3D*®, hydrodynamic forces generated by fish like body locomotion, Iran High Council of Informatics, 2017
- 1st Rank in National Remote Control Boat Competitions, RCBC2008

CERTIFICATES

- Industrial Automation with PLC S7 Simatic, Elementary and Advanced, MFT, June 2024
- OpenFOAM training course, Iranian society of mechanical engineers, Oct. 2012
- ANSYS CFX, Iranian society of mechanical engineers, Nov 2012
- Marine Shaft Alignment, vibration analysis and practical course, May 2014

LANGUAGE

- **Persian:** Native
- **English:** Mid-range based on TOEFL IBT 84 (2016)