Matej Dević – MEng Nav. Arch.

Naval Architect with over 5 years of experience leading computational fluid dynamics (CFD) and finite element analysis (FEA) projects. Managed teams and led development for high-profile maritime projects, delivering innovative solutions for clients such as Exmar Offshore Company and Rand Boats. Adept at solving complex structural and hydrodynamic challenges and passionate about incorporating programming and automation into engineering.

devicm14@gmail.com *+385 (0)98 197 2902* *Click here*

EDUCATION

Master's degree in Naval Architecture, MEng (Nav. Arch.)

10/2019 – 07/2021

Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture in Split

Thesis

Analysis of the hydrodynamic performance of a RoPax ship with water-jet propulsion

Bachelor's degree in Naval Architecture, BEng (Nav. Arch.)

10/2015 - 09/2019

Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture in Split

Thesis

Calculation of AUV Wave Resistance

Mechatronics Technician

09/2011 - 05/2015

Technical school Zadar

Thesis

Industrial robots in production

DIGITAL SKILLS

CFD Software:

- NUMECA Fine/Marine, NUMECA Hexpress, Star-CCM+, Ansys, Cadence Omnis, openFOAM, Paraview

CAE Software:

- AutoCAD, Rhinoceros, SolidWorks, PTC Creo, Catia,

Naval Architecture & Structural Analysis Software:

- Simcenter FEMAP, Abaqus, ComposeIT, Mars2000, MaxSurf, HullScant

Programming Languages:

- Python

LANGUAGE

Croatian - Native or Bilingual Proficiency

English - Full Professional Proficiency

WORK EXPERIENCE

Naval Engineering Solutions

CEO

05/2022 – present

Description

- Service and consultancy business - Shipbuilding and Offshore industry with FEA and CFD expertise.

Exmar Offshore Company

Texas Houston (US) and Split (Croatia)
Hybrid

Engineering Team Lead

02/2023 – 04/2024 – 1 yrs 3 mo

https://www.exmaroffshore.com/

Description

- Led a team of 6 engineers on various high-profile projects in the offshore and shipbuilding industries
- Spearheaded detailed engineering analysis for the **ENI Congo FSU ship conversion**, including buckling and fatigue assessments, material selection, and structural calculations. Assisted site teams with urgent engineering requests, addressing real-time project challenges.
- Performed redundancy analysis on the **Salamanca Deck Joint**.
- Supervised structural engineering work for the **Trion Project**, providing technical support and guidance to a team of 4 engineers during critical phases.
- Provided supervision and technical support for new **FLNG Conversion** projects, ensuring compliance with design standards and safety regulations.
- Contributed to the **Pre-FEED phase** for BP's offshore platform, delivering conceptual design solutions and structural analyses.

Structural Specialist

06/2022 – 02/2023 – 8 mos

Description

- Conducted structural strength assessments and buckling analyses for the **Shenandoah** sump pile support, ensuring compliance with industry standards.
- Modeled and calculated load distribution, ensuring accurate strength assessments and delivering reports to client.

ESS - Engineering Software Steyr

Austria - Remote

Research and Validation Engineer

10/2021 – 03/2023 – 1 yrs 6 mo

https://www.essteyr.com/

Description

- Performed comprehensive testing and validation of advanced solvers, including **Lattice Boltzmann Method (LBM)**, **Smoothed Particle Hydrodynamics (SPH)**, and **Lagrangian Discrete Dynamic (LDD)** solvers, ensuring robust performance across various engineering scenarios.
- Automated testing processes using **Python scripting**, improving efficiency and reducing manual testing time by 30%.
- Conducted functional testing to ensure the accuracy and stability of CFD and structural solvers used in shipbuilding and offshore industries.
- Collaborated with cross-functional teams to troubleshoot and resolve software issues, contributing to the refinement and optimization of ESS's software tools.
- Provided feedback on solver performance and helped enhance the accuracy of simulation results in complex fluid dynamics and structural analysis applications.

FESB - Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

Split

Researcher

09/2021 – 10/2023 – 2 yrs 1 mo

http://naval.fesb.unist.hr/projects/

Description

- Worked as a full-time researcher on the **CEKOM - IRA 3 Innovative Waterjet Propulsion Solution** project, conducting advanced **CFD simulations** of fluid dynamics around the hull to optimize waterjet propulsion with variable pitch systems.
- Led hydrodynamic performance analysis and participated in designing novel propulsion systems aimed at enhancing efficiency and sustainability in marine engineering.

Demonstrator

02/2021 - 09/2021 – 7 months (1 semester)

https://www.fesb.unist.hr/

Description

- Assisted in teaching the Advanced Marine Vehicles Master's course, guiding students through complex CFD analyses using **NUMECA Fine/Marine** and structural analysis using **Simcenter FEMAP**.

FESB Hydro

On Site - Split

Structural Design & Hydrodynamic Engineer

12/2019 - 08/2021 – 1 year and 9 months

http://hydroteam.fesb.unist.hr/en/foiling-moth/

Description

- Led the structural design optimization and composite hull construction for a high-performance vessel, using Simcenter FEMAP for finite element analysis (FEA).
- Optimized hydrodynamic performance through detailed CFD simulations using NUMECA Fine/Marine, achieving significant improvements in vessel speed and efficiency.

Mechatronic engineer

03*/2021 – 06/2021 – 5 months*

http://hydroteam.fesb.unist.hr/en/cnc-machine/

Description

- Worked on a student project for the design and programming of a CNC machine, focusing on mechatronics, electronics, and automation.

Project Manager

10/2018 - 01/2020 – 2 years

http://hydroteam.fesb.unist.hr/en/hydrocontest-x-2019-en/

Description

- Led the Hydrocontest-X 2019 project, managing financial and technical aspects of the competition.
- Directed the design, calculation, and optimization of hull resistance using NUMECA Fine/Marine and Rhinoceros, achieving 2nd place in the international student competition.
- Conducted structural analysis using Simcenter FEMAP to ensure vessel stability and performance, collaborating with multidisciplinary teams to meet tight project deadlines.

WORK RELATED EXPIRIECE

Resistance Calculation – Project Client: MELIN d.o.o.

- Performed resistance, hydrostatics, and stability calculations for a 50m yacht, optimizing hull performance and ensuring design compliance with client specifications.

Boat Engine Pedestal – Project Client: NOBILO PROJEKT

- Conducted FEM structural analysis of a boat engine pedestal after an engine swap to ensure structural integrity and operational safety.

"Alessandro I" Ship Stability – Project Client: NOBILO PROJEKT

- Carried out transverse stability calculations for a grounded vessel, providing an estimate of post-grounding stability for repair and recovery operations.

Dubrovačka Karaka Stability Calculation – Project Client: MarisStella

- Conducted ship stability analysis for the preservation of a cultural heritage Carrack ship model, ensuring compliance with restoration and preservation standards.

Ship Superstructure Analysis – Project Client: NOBILO PROJEKT

- Performed FEM analysis on a modified composite superstructure, optimizing strength and weight for enhanced vessel performance and safety.

Self-Elevating Modular Barge – Project Client: NOBILO PROJEKT

- Conducted FEM analysis on modular barge connections in various positions, providing detailed local analysis for improved design and structural performance.

"EX DJC 614" Landing Assault Ship Modification – Project Client: NOBILO PROJEKT

- Performed deck structure calculations using BV ComposeIT and Simcenter FEMAP, ensuring structural integrity after modification and meeting Bureau Veritas certification standards.

M/Y "My Destiny" Superstructure-Hull Joint Analysis – Project Client: NOBILO PROJEKT

- Carried out FEM analysis of the steel hull and fiberglass superstructure connection, designing and optimizing the new sundeck platform for improved strength and functionality.

Sailboat Cradle Design – Project Client: Salona Group LTD

- Designed and performed FEM analysis of a cradle structure for a new class of sailboats, optimizing the construction for durability and load capacity.

Work Boat Pecten II Consulting – Private Client

- Provided consultation on ship lifting procedures, sandblasting, painting, and composite patching, offering technical guidance for zinc protector placement and structural reinforcement.

Crane Modular Gantry Design – Private Client

- Designed a workshop crane using FEM analysis, ensuring safety, structural strength, and load-handling capacity for industrial applications.

Powerboat Trophy 2805 Propeller Design and Optimization – Private Client

- Designed and optimized a propeller using CFD simulations and FEM analysis, improving performance and wake coefficients. Utilized Wageningen B series for precise propeller design.

OPV1900 Seakeeping Analysis – Project Client: Damen Shipyards Group

- Performed extensive CFD analysis on ship responses in various sea conditions, optimizing the vessel's bulbous bow and conducting FEM analysis of the dynamic pressure effects.

16.5M 72PAX Catamaran Design – Private Client

- Contributed to the preliminary design and structural optimization of a 16.5m catamaran, conducting stability, power, and FEM analysis to meet client specifications and regulatory requirements.

OTHER NOTABLE EXPIRIECE

Founder and First president - FESB Hydro - Naval Architect Students Association

From 2018 group of students and from 2021 Association -
http://hydroteam.fesb.unist.hr/en/home-2/

Club Secretary – Basketball Club Sukošan - From 2024 – present

Volunteer role in the administration and coordination of club activities, including communication with members, organizing events, and maintaining internal documentation.

HONORS & AWARDS

Special Rector Award - *Issued by University of Split · Apr 2020*
Award for exceptional success in public appearances, activities, participation and success in international competitions. Associated with Bachelor in Naval Architecture at FESB for activities on Student Project.

International student competition Hydrocontest-X 2019 *– Sept 2019*
2nd place on International student competition Hydrocontest-X 2019 - Project Manager at FESB Hydro – Naval Architecture Student Association

3D & 2D Competition in the Mechanical Engineering *– May 2014*
2nd place in 2D and 4th place in 3D - Associated with Technician for Mechatronics at Technical school Zadar

PUBLICATIONS

Boris Ljubenkov, Duje Fržop, Luka Galić, Matej Dević
Design and production technology of the main hydrofoil of the Moth-class sailboat
The 26th Symposium on Theory and Practice of Shipbuilding - 2024

Raič Filip, Dević Matej, Blagojević Branko
Analysis of the possibility to replace the propeller system of the RoPax Ship with Water jet propulsion
10th International Conference on Marine Technology – Winkler 2023.
The 25th Symposium on Theory and Practice of Shipbuilding

Matej Dević, Josip Bašić, Martina Bašić, Branko Blagojević
Validation of the CFD procedure for RoPax resistance assessment
9th International Conference on Marine Technology – Winkler 2021.

Matej Dević, Duje Fržop, Luka Galić, Filip Raič, Ante Buble, Karlo Vučić, Jure Bebić
FESB Hydro Team – Student Project
24th Symposium on the Theory and Practice of Shipbuilding

Matej Dević
Materials and technologies used through Hydrocontest-X project building
9th International Conference Mechanical Technologies and Structural Materials

CERTIFICATES & WORKSHOPS

Simcenter Femap Workshop - Guest lecturer
The two-day hands-on workshop on Introduction to Finite Element Analysis for employees of Shipyard Brodosplit d.o.o. Workshop held 4.02.2021.

Cadence OMNIS
Successfully completed the CFD Online Course held from 26.10.2021 until 14.12.2021.