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Educational Qualifications

M. Tech in Civil Engineering - Offshore Structures [2010-2012]

NIT Calicut

CGPA - 7.54

B. Tech in Civil Engineering [2005-2009]

School of Engineering - CUSAT

Percentage of marks - 70.1%

Kerala HSE XII [2005]

EMEA HSS Kondotty

Percentage of marks - 85%

CBSE X [2003]

MUES Kondotty

Percentage of marks - 80%

Teaching and Industrial Experience

University: **Cochin University of Science and Technology**

Assistant Professor - Department of Ship Technology [30 Oct 2020 - Till present date]

Organization: **Smart Engineering and Design Solutions India Pvt Ltd.**

Deputy Manager - Hull Structures and Finite Element Analysis [Nov 2018 - Oct 2020]

- Full ship finite element modeling and analysis of an ASW project involving the extreme strength analysis, residual strength analysis, whipping analysis, vibration analysis, transient shock analysis, and foundation impedance analysis.
- Finite element modelling and structural design assessment of a passenger vessel [1200 Passengers, About 140m length]. This vessel is classed by Lloyd's Register (LR).

- Computational Fluid Dynamics in OpenFOAM - calm water resistance problem. A study of the Magnus effect in 2D was also performed.

Assistant Manager - Hull Structures and Finite Element Analysis [July 2016 - Sep 2018]

- Finite element modelling and structural design assessment of a passenger vessel [500 Passengers and 150 tonnes cargo, About 100m length]. The vessel is classed by the American Bureau of Shipping (ABS). The strength analysis of various equipment foundations such as the azimuth thruster foundation and normal modes analysis was performed.
- Ship hull lines creation from point cloud data - The hull lines were recreated with help of Python and VBA customisation in AutoCAD from the point cloud scan data. AutoCAD customisation in VBA for the generation of shell expansion drawing.
- Developing programs for the classical approach of static wave balance for wave loading.

Design Engineer - Hull Structures and Finite Element Analysis [Oct 2014 - Jun 2016]

- Finite element modelling and structural design assessment for the design development of an LNG fueled bulkcarrier, as per ABS DLA/SFA system. The design has been received an approval in principle from the class American Bureau of Shipping (ABS). The vibration response analysis (frequency response) was performed for early identification of potential vibration issues.
- Microsoft Excel VBA programming for boil-off gas and LNG fuel management simulations of the vessel and prediction of holding time without venting off the boil-off gas. Holding time and fuel management in a voyage was simulated to device the boil-off gas management strategy.

Trainee - Junior Design Engineer - [Nov 2012 - Sep 2014]

- Finite element full ship modeling and structural strength analysis of Bulkcarriers, Tanker, Fast Patrol Vessel (FPV).
- Free and Forced vibration analysis of Bulkcarriers and FPV.
- Vibration response control and optimisation of radar mast of FPV.

- Global strength analysis of Bulkcarriers and Tankers using CSR Software and ABS DLA/SFA system. Local Strength analysis of Bulkcarriers, Tankers, and FPV.
- Eigenvalue buckling strength analysis.
- Fatigue strength analysis of Bulkcarriers using CSR software and ABS DLA/SFA system.
- Linear static analysis of mooring fittings, equipment foundations for Bulkcarrier and FPV.
- Preparation of documents against actual obligations, contractual agreements and produce any required submissions to classification society, owner, and shipyard during the design and construction phase of vessels.

Internship

Organisation: **Octa Engineers (Designs) Pvt. Ltd.**, Bangalore, India

Analysis and design of an offshore living quarters module (LQ).

The various analysis and design considerations for the in-place and the lifting situations were subjected to study with the aid of STAAD Pro V8i software.

M. Tech. Thesis

Title: Structural damage detection by dynamic non-destructive technique.

Abstract: The existence of damages results in the changes in structural properties, such as mass, damping and stiffness and these changes will alter both static and dynamic behaviour of the structures and thus can be detected by measurements through distributed sensors. The shift in natural frequency caused by the damage contains information on some generalised coefficients of the unknown stiffness variation. Changes in the nodes of the mode shapes can be used to identify localised damages. An optimisation problem utilising the method of genetic algorithm for the solution, involving modal analysis in each iteration of optimisation is formulated for finite element model updating and detection of damage. The objective function formulation and finite element programming was performed in MATLAB. The genetic algorithm method in the optimisation tool box within the MATLAB environment was utilised.

M. Tech. Seminar

Scaled modeling of SPAR platform, where a detailed study of the scaling laws in general and the case specific to spar platforms was performed.

Areas of Interest

Finite element analysis, Structural Mechanics, Wave hydrodynamics, Computational Fluid Dynamics, Computer Programming, Image Processing, Ship Response Prediction, Machine Learning

Software skills

FEA Softwares - MSC Nastran, FEMAP, ANSYS

CFD Softwares - OpenFOAM

Structural Analysis Structures - STAAD.Pro V8i

Scientific computing - MATLAB, Scilab, GNU Octave, Scipy

Programming Languages - Python, C++, VBA (Microsoft Excel, FEMAP, AutoCAD), FORTRAN, AutoLISP

Drafting Softwares - AutoCAD, FreeCAD

3D Modelling and BIM - Revit, Rhinoceros, Blender 3D

Project Management Softwares - MS Project, Primavera, OpenProject.

Personal Information

Date of Birth: **25 July 1987**

Gender: **Male**

Nationality: **Indian**

Father's Name: **P. N. Abdul Kader**

Name of Spouse: **Ami Iqubal**

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