

Fan Di-Xia

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ACADEMIC QUALIFICATIONS

Shanghai Jiao Tong University, Shanghai, China

Bachelor of Science in Naval Architecture and Ocean Engineering

Expected in June 2013

Major GPA: 90.4/100

Related Coursework:

Theoretical Mechanics	97	Ocean Engineering Environment	97	Ship Reliability	95
Materials Mechanics	99	Probability & Mathematical Statistics	99	.NET Programming	94
Ship Equipment	97	Marine Fluid Mechanics	95	Marine Engineering Lab	95

PUBLICATIONS

- Chen Y., Fu S. X., Xu Y., **Fan D.** "Hydrodynamic Characters of a Near-Wall Circular Cylinder Oscillating in Cross Flow Direction in Steady Current" *Chinese Journal of Physics* (Accepted), 2012.
- Chen Y., Fu S. X., Xu Y., **Fan D.** "High Order Force Components of a Near-Wall Circular Cylinder Oscillating in Transverse Direction in Steady Current" *OMAE 2013* (Submitted), 2012.
- Xu Y., **Fan D.**, Fu S. X. "Analysis of the Consequence of the Local Components Failure in Jacket Platforms" *OMAE 2013* (Submitted), 2012.
- Xu Y., Fu S. X., Chen Y., Zhong Q., **Fan D.** "Experiment Investigation on Vortex Induced Forces of Oscillating Cylinder at High Reynolds Number" *Acta Mechanica Sinica* (Received), 2012.
- **Fan D.**, Xue H., Qiao C., Ye H. "Strength Assessment of Pump Tower for LNG Vessels" **PRP, vol. 19th, T010PRP19011*, 2011.
- Zhang Y. Z., **Fan D.**, Xiao R., Jiang L. "Design and Feasibility Analysis of a New Type of Inflatable Life Raft" **NUSTIP, vol. 4th, S010IPP4001*, 2011.

*NUSTIP: National Undergraduate Scientific and Technological Innovation Project; *PRP: Participation-in-Research Program of SJTU

PATENTS

- "The Control System and Strategy of Vortex Induced Vibration Experimental Facility Using Force Feedback Technology", patent pending 2012, CHN, **No. 201210437233.9**
- "Self-Excited Vortex Induced Vibration in Two Directions Experimental Facility for Double Deepwater Riser Segments Interactions in Uniform Flow", patent pending 2012, CHN, **No. 201210439276.0**
- "Self-Excited Vortex Induced Vibration in Two Directions Experimental Facility for Deepwater Riser Segment in Uniform Flow", patent pending 2012, CHN, **No. 201210437232.4**

RESEARCH EXPERIENCE

Deep Water Steel Catenary Riser (SCR) Vortex-Induced Vibrations Experiment

Research Assistant (supervisor: Dr. Fu Shi-Xiao)

03/2012 - now

Statoil ASA

- Developed the underwater image processing software to identify the vibration motion of SCR.
- Reduced the time-domain SCR motion from the strain data(shown in animation).
- Apply and improve IFEM (Inverse finite element methods) to estimate the fluid forces distribution.
- Analyze SCR axial force fluctuation due to VIV and its contribution to lateral response.(Mathieu Equation)

Vortex-Induced Vibrations Experiment Using Force Feedback Technology

Principal Investigator(supervisor: Dr. Fu Shi-Xiao) 03/2012 - now *NUSTIP

- Designed a 2-DOF(cross-flow and in-line) VIV experimental facility using force feedback technology.
- Developed the low-pass filter(prototype: Chebyshev I) for the data processing system.
- Design the control system for the force feedback VIV experimental facility(in progress).

Renewable-Energy-Powered Multihull Sailboat "Harmony"

Chief Designer/Chief Engineer 03/2010/ - now *SUSTIP/*Co.

- Finished 6-m conceptual ship design and its marine performance prediction, with Ph.D candidate Qian Peng.
- Supervised the construction of the 2m scale model as chief engineer.
- Organized several tests for"Harmony" 2m scale model from 2011, 11, 27th as chief coordinator.

Design and Modeling of a Flexible Hexapod Robot "Sun Shine"

Independent Investigator 10/2010 - 05/2011 Club Project

- Proposed a new type of bionic flexible hexapod robot adapting to different kinds of terrains.
- Independently finished the conceptual design and 3D modeling of the hexapod robot "Sun Shine".
- Independently finished the structure construction, circuit design, and Windows GUI development for robot.

Torsional Vibration Generator and Analyzer Platform

Co-Instructor 09/2010 - 05/2011 *SUSTIP

- Finished the structural design and dynamic simulation of torsional vibration generator platform.
- Co-instructed Xu Xiang-Rong, et al on the measuring system with associate Prof. Chen Yu-Kung.
- Developed upper computer analysis software.

Strength Assessment of Pump Tower for LNG Vessels

Principal Investigator 09/2010 - 04/2011 *PRP Project

- Programmed to automatically calculate the time-domain Morison load on LNG vessel pump tower model .
- Programmed to automatically create the critical FEM load cases model for MSC Nastran.
- Assisted Qiao Chi, et al. in pump tower safety evaluation program based on tubular joint criterion API.

Design and Feasibility Analysis of a New Type of Life Raft

Collaborator 10/2009 - 04/2011 *NUSTIP

- Finished the structural design, stability analysis of the inflatable life raft for offshore accidents.
- Proposed and finished the conceptual design of a new type of saline water desalination equipment on raft.

Development of an Autonomous Underwater Vehicle (AUV) "Flying Fish"

Project Manager 10/2009 - 03/2011 *NUSTIP/Club Project

- In charge of the electric and control system development group.
- Designed and modeled "Flying Fish II", based on "Flying Fish I".

Test and Simulation System Design Solutions for Submarine System

Research Assistant 03/2009 - 03/2010 *PRP Project

- Developed a simulation GUI for submarine oil production system to validate a safe production procedure.
- Built a small model automatically detecting pipe leaking problem.
- Win the honor of excellent departmental PRP project.

*SUSTIP: Shanghai Undergraduate Scientific and Technological Innovation Project; *Co: Company Supported Project

*NUSTIP: National Undergraduate Scientific and Technological Innovation Project; *PRP: Participation-in-Research Program of SJTU

WORK EXPERIENCE

SJTU Intellectual Vehicle Club (SJTUIV)

<i>Co-Founder and CTO</i>	11/2009 - now	Shanghai
● Founded the SJTU IV club(Shanghai Jiao Tong University Intellectual Vehicle Club).		11/2009
● Organized and refereed the 1st "Songliao - Chaori Green Boat Competition".		09/2010 - 04/2011
● Technically supported the 2nd "Songliao - Chaori Green Boat Competition".		09/2011 - 04/2012
● SJTU IV Club was elected one of ten Key Student Scientific and Creative Labs.		05/2010

Internship in Shanghai Lixin Shipyard

<i>Participant</i>	07/2010	Shanghai
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TEACHING EXPERIENCE

SJTU NAOCE Undergraduate Open Course

<i>Founder and Lecturer</i>	03/2011 - now	Shanghai
● Established extracurricular open course series for SJTU Naval and Ocean Engineering undergraduate.		
● Lecturer of Course: "3-D Designing and Animation".		
● Lecturer of Course: "Introduction to Programming: C#.net".		
● Co-Lecturer of Course(with Dr. Liu Jing-Yang): "Introduction to Embedded Development: AT-mega16".		

HONORS AND AWARDS

Shanghai Jiao Tong University Academic Excellent Scholarship	2009
Shanghai Jiao Tong University Enterprise Scholarship	2010
1 st Prize in "Shui Yuan" Basketball Competition	2010
2 nd Prize in National Autodesk Inventor Magic Cube 3-D Modeling Competition	2010
Lloyd's Register Educational Trust Scholarship	2012

SOFTWARE/PROGRAMMING SKILLS

Programming: Experienced in C#, C, C++, VB; Familiar in Java, Python, html

CAD software : Experienced in AutoCAD, SolidWorks, Autodesk Inventor; Familiar in Maxsurf

CAE software: MSC. Patran, MSC. Nastran, Ansys, Fluent

Math related: Experienced in Matlab, Origin

Others: LabView, Proteus, Protel 99SE, EndNote, ATmel Single-chip Development