Xiang Long

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PROFESSIONAL PROFILE

A well trained engineer with about 3 years of experience as a research assistant in mechanical engineering, areas of expertise include metal fracture and its elastic-plastic properties research with FEA modeling; Cu/CNT composite material reinforcement mechanism research with FEA modeling, linear/non-linear static analysis and dynamic analysis of stress-strain experiment result with FEA modeling; Fluids mechanics, heat transfer, Computational fluid dynamics(CFD) and FEA application in biomedical & micro-chip cooling research, 2D and 3D FEA&CFD modeling with Hypermesh&Pro/E is looking for a position in the areas of mechanical engineering.

EDUCATION:

09/2009- 05/2012 Master of Science in Mechanical Engineering
University of Central Florida

09/2002-03/ 2005 Master of Engineering in Marine engineering
School of Naval Architecture, Ocean and Civil Engineering
Shanghai Jiao Tong University (SJTU)

09/1998-07/2002 Bachelor of Engineering in Power & energy engineering
School of Power and Energy Engineering
Shanghai Jiao Tong University (SJTU)

Research experience

Graduate Research Assistant, University of Central Florida 07/2012 – present

Area: Bird strike on jet engine

Team projects: **FEA** modeling, simulation and algorithm research of Bird strike on Jet engine modeling

- **FEA** algorithm research on bird strike modeling
- Jet engine blade **3D** modeling with Hypermesh&ProE, and **FEA** dynamic simulation of bird strike on Jet engine blade with **LS-DYNA.**

Graduate Research Assistant, University of Central Florida 07/2012 – present

Area: Intrachip/Interchip Enhanced cooling system design

Team projects: reliability study of the micro-channel cooling system base on **FEA&CFD** simulation

- Micro-channel heat sink material properties modeling
- Heat transfer and stress analysis of micro-channel cooling system base on **FEA&CFD** modeling with **LS-DYNA.**

Graduate Research Assistant, University of Central Florida 01/2011 – present

Area: Metal elastic-plastic properties research; material fracture/failure mechanism study;

Team projects: Theoretical, experimental and FEA simulation study on composite material properties and its reinforcement mechanism;

- Pure copper mechanical properties(elasticity and plasticity) modeling with **Hypermesh, Pro/E**, calibrating and simulating with **LS-DYNA**
- Pure copper and Cu/CNT composite material fracture and failure FEA model development (modeling with **Hypermesh**)
- Numerical study on reinforcement mechanism of Cu/CNT composite
- Mechanical properties of composite material study base on experimental stress-strain measurement, and advanced stress-strain analysis with **LS-DYNA**
- Linear/non-linear static analysis and dynamic simulation with **LS-DYNA**
- **Material sub-routine** development to predict copper & Cu/CNT elastic-plastic properties
- FEA pre/post processing tools development with **Matlab**/**C++**

Graduate Teaching Assistant, University of Central Florida 01/2011-08/2011

Course: Advanced Engineering Design Practice (Pro/E, Solidworks)

- Assist students operation/practice in the class
- Led laboratory practice and grading

Graduate Research Assistant, University of Central Florida 9/2009 – 01/2011

Area: Thermo-Fluids, Fluid-structure interaction (FSI), Computational Fluid Dynamics (CFD) and Finite Element Analysis (FEA) application in biomedical research

Team projects: Researching fluid-structure interaction (FSI) and deformation of human lobes employing finite element analysis (FEA) and computational fluid dynamics (CFD).

- Segmentation, cleaning, and refining of **complex 3D meshes** of human trachea-bronchial tree and lung lobes using **Mimics**, **3-Matic and Hypermesh** software.
- Simulating **fluid-structure interaction(FSI)** of the human tracheo-bronchial tree with **ADINA**
- Simulating the transient state air flow through the porous medium model of human lobes and the deformation which generated by the air flows with **ADINA**
- Human lobe material properties space distribution modeling research with **ADINA**
- Simulation of air flows in different lung models with **ADINA**

Graduate Research Assistant, Shanghai Jiaotong University **9/2002 – 3/2005**

Area: Thermo-Fluid &Power system

Projects: The investigation of Aquifer Thermal Energy storage (ATES) system, founded by National Natural Science Foundation of China

- Designed a experiment equipment to simulate the underground water flowing and temperature distribution in flowing process.
- Designed experiment plan to simulate underground water flows and temperature distribution during water recharging and pumping process under different conditions.
- Establish a math model to simulate water flows and temperature distribution, and compare simulation result with experiment data.

Projects: The investigation of ship power plant synchronization control system

- Investigated the control policies for ship power plants synchronization system. We studied the power station synchronization under different condition, and improved control policies on the some ships.
- Developed new control system and control policies for power plants, and starting&stop policies of ship power plant.
- Test and validate power plant synchronization system on a experiment equipment, measured and analyzed the electricity throughout synchronization operation.

Working experience

Dias Automotive Electronic System Co., Ltd. **Shanghai China**

System/Software Engineer **06/2007-08/2009**

1. Design Immobilizer system routine according to customer needs
2. Unit testing and system-level verification testing of Immobilizer system.
3. Design, develop and maintain Immobilizer testing and matching system
4. FEA and packaging design of electronic part, and reliability design & testing.
5. Technical support to the customers after sales

LCFT Co., Ltd. **Shanghai China**

Mechanical and system Engineer **03/2005-06/2007**

1. Metal soft system function design
2. System integration test
3. Systematically analyze the defect of the product for application.

PUBLICATIONS:

- "The application of ATES and its condition for energy storage" , (**Xiang Long**, Manying Wan, Jie Ma), Energy Engineering, 2005 No.1 P. 42-44
- "Research on ATES mathematical model and its flowing condition" , (**Xiang Long**, Manying Wan, Jie Ma), Energy Research & Utilization, 2005 No.1 P.14-18
- "The application of ATES in air conduction" , (**Xiang Long**, Manying Wan, Jie Ma), Energy Research and Information, 2009 25(4)
- "Application of Ethernet in Marine Power Station", (Xifa Yang, Manying Wan, Shaoheng Xu, **Xiang Long**),SHIPBUILDING OF CHINA, Vol.47 No.1(SerialNo.172) Mar.200, P.66-71

Conference Papers and Presentations

- "Visualization of 3D volumetric lung dynamics for real-time external beam lung radiotherapy", "Medicine Meets Virtual Reality conference", January 2011, accepted.

- "The application of AutoNet on auto-parallel set in ship power station", (Xifa Yang, Manying Wan, Shaoheng Xu, **Xiang Long**), The first forum of military affairs and oceanic stratagem's development, Oct. 2004
- "Research and Design of OPC Data Client", (Xifa Ynag, Manying Wan, **Xiang Long**, Xin Zhou, Xiju Shi), Advanced Manufacturing Technology Forum and the second manufacturing automation and information technology exchange, 01 Sept. 2003
- "A kind of control Network based on Ethernet- AutoNet" ,(Xifa Yang, Manying Wan, Shaoheng Xu, **Xiang Long**), Chinese Mechanical Engineering Society's Annual Conference, 09 Oct. 2004

Patents:

- "Multifunctional students Bed", (Manying Wan, Xifa Yang, **Xiang Long**) 04 Dec. 2003 Patent Number: 200320108608.3
- "A equipment to test aquiferous multi-pores materials' characteristics of heat transfer and water flowing among pores",(Jie Ma, Bin Dai, Zhenquan Dai, **Xiang Long**) 6 Oct. 2004 Patent Number:200410025038.0

Skills

CFD & FEA: LS-DYNA, ADINA

Biomedical/Complex 3D Meshes: Mimics, 3-Matic, Hypermesh

Programming: C++, matlab

General: Solidworks, ProE, MathCAD, AutoCAD, Microsoft Office