Ran Duan

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Profile

Three years working experience as Mechanical Designer and Simulation Engineer in automotive industry, Three years experience in Computational Fluid Dynamics (CFD), structural analysis with Finite Element Analysis (FEA). Skillful application experience of CAD software SolidWorks and ERP software JobBOSS. Solid knowledge in renewable energy, heat transfer, fluid mechanics, materials and mechanical engineering.

Skills

FEA Software	ANSYS (Fluent, Mechanical, Discovery AIM, Live), SolidWorks Simulation.
CAD Tools	SolidWorks (Certified SolidWorks Professional), Creo, Siemens NX, AutoCAD.
Programing	MATLAB, C++.
Other	PLM, BoM, GD&T, JobBOSS, LabView, ImageJ, Microsoft Office, Class 5 Driver's Licences, Adobe (Acrobat, Photoshop, Premiere Pro).

Education

Master of Engineering, Materials Engineering 2017

McGill University, Montreal, Canada.

- Thesis: Simulation of Waste Heat Recovery for Electricity Generation.

Bachelor of Engineering, Mechanical Engineering 2011

North University of China, Shanxi, China.

- University Scholarship for Academic Achievement.

Professional Experience

Engineering Specialist 2019

Aircraft Appliances and Equipment Ltd. Brampton, Ontario, Canada.

Mechanical Simulation Engineer 2018-2019

Kunming Yunnei Power Co., Ltd. Kunming, China.

- Analysis, modeling, computer simulation and optimization of the radiator for multi-cylinder small bore diesel engine with Finite Element Analysis (FEA).
- According to the simulation requirements, modify the geometry and mesh of the 3D model.
- Determine the governing equation of the CFD method, select the discrete method, input the relevant parameters, and solve the problem.
- Visualization of temperature, velocity, pressure, and other parameters.
- Submit ANSYS Fluent and Mechanical simulation results to the mechanical designers and propose optimization recommendations.

Heat Transfer, Fluid Mechanics and Sustainable Materials Processing 2016-2017
Teaching Assistant
McGill University, Montreal, Canada.

- Co-instructed and assisted Prof. Frank Mucciardi with 3 university level engineering courses. Responsibilities including tutorial delivery, grading assignments and exams, demonstrating laboratory sessions, replying Emails from students and leading discussions. Gave lectures of ANSYS tutorial including Fluent, Mechanical and Transient Thermal.

Thermoelectricity Lab Research Assistant 2014-2017
McGill University, Montreal, Canada.

- Conducted research on waste heat recovery for electricity generation with ANSYS Fluent.
- Constructed, modified and optimized the laboratory test setups for testing of the thermoelectricity generator.
- Supervised teams of seven students performing experiments and tracking data.

Thermodynamics of Materials Lab Research Assistant 2012-2013
Concordia University, Montreal, Canada.

- Conducted research on diffusion bonding technology for Ti-5553 alloy.

Mechanical Design Engineer 2011-2012
Kunming Yunnei Power Co., Ltd, Kunming, China. 2013-2014

- Developed and designed two crankshaft flywheels prototypes for crank mechanism to fulfill mechanical requirements.
- Performed 3D designs of parts and assembly with SolidWorks, considering design for manufacturing, assembly and reliability.
- Created 2D drawings with AutoCAD based on tolerance stack-up calculation and manufacturing process.

Professional Certificates

ANSYS Mechanical and Fluent Professional Training Program 2019
ANSYS Pera Corporation Ltd, Shanghai, China.
Certified SOLIDWORKS Professional 2019
Dassault Systèmes, Vélizy-Villacoublay, France.
Workplace Hazardous Materials Information System (WHMIS) Training 2015
McGill University, Montreal, Canada.

Activities and Interests

Quadcopter Drone and Radio-Control Helicopter Flying

- Certified Professional UAV Operator with Professional Radio Operator Certificate.