JALAJ MAHESHWARI

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EDUCATION

University of Pennsylvania, USA
Master of Science in Engineering, 3.28/4.00 — Mechanical Engineering and Applied Mechanics — May 2017

Birla Institute of Technology & Science – Pilani, INDIA
Bachelor of Engineering (Hons.), 7.49/10.00 — Mechanical Engineering — July 2015

PROFESSIONAL EXPERIENCE

Student Lab Assistant — May 2016 – Present
Center for Injury Research and Prevention, Children's Hospital of Philadelphia, USA

- Conduct FEA of an anthropomorphic test device (ATD) in a child restraining seat (CRS) for a far-side impact crash.
- Pre-process in HyperMesh, simulate and post-process in LS-DYNA for different impact angles to determine optimum latching position and angle in a CRS.

Summer Research Intern — May 2015 – July 2015
Indian Institute of Technology – Gandhinagar, INDIA

- Modeled CFD conditions for standard AGARD 445.6 wing in Star-CCM+ and structural conditions in ABAQUS.
- Coupling of software to simulate fluid-structure interaction and validation study conducted for use in other FSI problems.

Summer Intern
Adani Power Limited, INDIA — May 2013 – July 2013

- Studied design and working of Coal Handling Unit of the power plant. Identified mechanical failures.
- Proposed solution to avoid failures associated with machinery. Improved belt wear life from 3 weeks to 2 months.

RESEARCH PROJECTS

Implementation of Feedback System to Form a Train Chain (Independent) — Mar 2016 – May 2016

- Utilized Arduino microcontroller, Ultrasonic Ping and Hall Effect sensors to implement feedback system.
- Coded PID control law on Arduino to make train follow lead train at fixed distance.

Design of an Axial Compressor for Use in the SpaceX Hyperloop System (Team) — Dec 2015 – Feb 2016

- Designed 20:1 compression ratio axial compressor for given Hyperloop operating conditions.
- Studied velocity triangles for rotors and stators to model each compression stage.

Bachelor's Thesis on 'Energy Harvesting from Aero-elastic Instabilities' (Independent) — Dec 2014 – May 2015

- Computationally modeled small energy harvesting device subjected to aero-elastic instabilities.
- Used fluttering motion of harvester to further produce electricity by use of piezoelectric patches.
- Varied material properties of harvester to study change in piezoelectric voltage generated.

Simulation and Analysis of Human Skeletal Joint (Team) — Jan 2014 – May 2014

- Simulated normal walking cycle and identified joint reaction forces at the hip, knee and ankle joints using OpenSIM.
- Studied ankle-foot orthosis to develop basic design for foot orthotic to prevent ankle injury.
- Explored reduction in metabolic costs in normal gait cycle.

SKILLS

CATIA V5	SolidWorks	Pro-E	Siemens NX	MATLAB	ANSYS	HyperMesh	Star CCM+	LS-DYNA
AutoCAD	Python	C	HTML	CSS				

CONFERENCE / PUBLICATION

- J. Maheshwari and M. Damodaran, "Computational Modeling of Small Energy Harvester Subjected to Aeroelastic Instabilities," presented at and in *Mechanics of Solids, Fluids and Materials, Proceedings of the 2nd INCAM-2015 at IIT Delhi, India, 13-15 July 2015.*

PROFESSIONAL DEVELOPMENT

- Completed certified online course on 'Introduction to LS-DYNA'. — 2016
- Completed certified course on '3D Modelling and Simulation' at BITS Pilani – Goa Campus. — 2014