JALAJ MAHESHWARI

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EDUCATION

University of Pennsylvania, USA
Master of Science in Engineering, 3.31/4.00 — 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

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

- Involved in projects dealing with crash analysis using finite element software.
- Conducting FE analysis of anthropomorphic test dummies (ATDs) in child restraining seats (CRSs)
- Pre-processing in Hypermesh, simulating and post-processing in LS-DYNA.

Summer Intern – Product Development (Passive Safety) — June, 2017 – Sep 2017
The Ford Motor Company, MI, USA
Finite element modeling of child restraining seat.

- Created finite element model of a highback booster seat to be used in crash testing simulations.
- 3D scanned physical seat, fixed model using CAD software, and created a fully functional FE model.
- Validated FE model with crash test data.

RESEARCH PROJECTS

Finite Element Modeling of a Shield CRS with Load Leg — Nov 2017 – Present

- Creating a fully functional finite element model of a test bench and shield CRS from CAD model.
- Validating FE models with physical test data; Analyzing performance with Q3 ATD and 3YO human body model.

Evaluating Efficacy of Different Belt Routing Schemes on a Human Body Model — May 2017 – Present

- Simulating kinematics of a 6YO child human body model with different booster seats.
- Comparing injury numbers and performance with Q6 ATD; Studying variation in dummy kinematics with and without side airbag.

Full Vehicle Crash Simulation Analysis of Frontal USNCAP Crash Tests — May 2017 – Present

- Studying full frontal, moderate, and partial overlap full vehicle crashes by creating FE models.
- Analyzing behavior of Q6 ATD and 6YO human body model in frontal vehicle crashes.

Evaluate the Efficacy of Seatbelt Routing Schemes on Booster Seats in Vehicle Crashes — May 2016 – Apr 2017

- Conducted FEA of a Q6 ATD in a child restraining seat in different crash impact scenarios and tested the biomechanics of the ATD with heightless, lowback, and highback booster seats.
- Altered the vehicle seat D-ring position and evaluated change in behavior of the ATD in a motor vehicle crash.

Study Effectiveness of Booster CRS in Nearside Crashes with and without Side Curtain Airbags — Jan 2017 – Apr 2017

- Ran FE simulations for a 6-year-old ATD in a CRS for a nearside crash impact scenario.
- Studied variation in behavior of ATD with absence and introduction of side curtain airbags.

Design of an Axial Compressor for Use in the SpaceX Hyperloop System — 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; Generated 3D CAD assembly for compressor.

SKILLS

CAD Software:	CATIA V5, SolidWorks, Pro-E, Siemens NX, AutoCAD
Simulation Software:	Hypermesh, LS-DYNA, ANSYS, Star-CCM+
Programming:	Matlab, Python, C, C++
Other:	Laser Cutting, 3D Printing, DFM, DFA, GD&T

CONFERENCE / PUBLICATION

- Maheshwari, J., Belwadi, A., "Efficacy of Seatbelt Routing Schemes on Newer Booster Child Seats in Simulated Frontal Motor Vehicle Crashes," presented at AAAM 2017 Conference, Las Vegas, NV, USA, 15-18 Oct, 2017.
- Belwadi, A., Hullfish, T., Maheshwari, J., Varone, B., Abraczinskas, A., Hanna, R., "Effectiveness of Booster Child Restraint Systems in Nearside Motor Vehicle Crashes with and without Side Curtain Airbags". (*Traffic Injury Prevention Jour.)*