|  |  |  |
| --- | --- | --- |
| **NITHEESH** | |  |
| Email ID: [nitheesh..379379@2freemail.com](mailto:nitheesh..379379@2freemail.com) | |  |
|  |  |  |

**Professional Profile**



Highly motivated mechanical engineer, working on Occupant Safety for Full Frontal Automotive Impact as per FMVSS 208 Regulations to enhance safety measures. Good communication skills, Extrovert and Proactive. Presently, seeking for a firm to contribute my creativity and skills.

* Ample knowledge in **CAE** Softwares such as **HYPERMESH and MADYMO** and strong computer skills with **Microsoft Office Suite.**
* Bounteous knowledge in **MADYMO** vehicle modeling and **Linear Impactor Tests.**
* Performed dummy positioning and simulation using **MADYMO**.
* Sufficient knowledge in **HYPERGRAPH** for plotting mainly FMVSS 208 Regulations.
* Hefty knowledge in Driver Airbag Modeling and sufficient knowledge in Passenger Airbag Hypermorphing.
* Sufficient knowledge in **FMVSS 208** regulations.
* Certified in **MADYMO** Introductory Training from **TASS International.**

**Educational Qualification**



|  |  |
| --- | --- |
| **Masters in Mechanical Engineering,** | **July 2016** |
| Wichita State University, Wichita, KS | 3.962/4.0 (GPA) |
| Bachelors of Technology, in Mechanical Engineering | May 2012 |
| Amrita School of Engineering, Amritapuri, India | 3.5/4.0 (GPA) |

**Relevant Coursework**



**MADYMO**, **HYPERMESH, HYPERGRAPH,** ADAMS VIEW, ADAMS CAR, MOTION SIM, MATLAB, CATIA V5and LS-DYNA

**PROFESSIONAL EXPERIENCE**



**CAE Analyst ,** Marutee Engineering Services LLC

Currently deputed at client location TK Holding, Auburn Hills

**June 2017 – Present**

* Performed MADYMO vehicle modeling
* Performed **Linear Impactor Tests (Passenger Airbag/Driver Airbag)** for various Clients to study the response
* Inflator Replacement Projects
* Performed project on **Knee Airbag (KAB)/Knee Foam** for second row passenger and studied the injury levels as per FMVSS 208 Regulations
* **Driver Airbag** and **Passenger Airbag** Modeling in HYPERMESH Software
* **Protocol Rating** usage for taking the end results (Pass/Fail) for the tests performed according to

**FMVSS 208 Regulations**

* Performed **Steering Column Study for Autonomous Driving** in **MADYMO**
* Prepared Overlays/Video Comparisons for tests performed for various clients and also, prepared presentations for the clients
* Sufficient knowledge (practical knowledge) in Dummy positioning for **SLED TEST** series
* Performed correlations (**FMVSS 208 Regulations**) for various clients in **HYPERGRAPH**
* Replaced PAB with C-PAB for certain models and compared to verify the injury parameters (High/Low)

**Graduate Research Assistant** **June 2016 – June 2017**

* Assisted junior students in their research work related to automotive using **MADYMO** and LS DYNA.
* Conducted lab sessions on **ADAMS VIEW and ADAMS CAR**, a multi-body dynamics software for junior students for their project work and also, for their future tasks.

**Graduate Teaching Assistant, Wichita State University** **Aug 2014-May2016**

* Deliver a range of teaching and assessment activities, including tutorials directed towards the delivery of subjects at both graduate and undergraduate level.
* Supervise practical work, advising on methods, and techniques to assist the transfer of knowledge.

**Academic Projects**



**Dummy Modeling and Simulation using MADYMO**

* Constructing a simple rigid seat and position a Hybrid III 50th Percentile ATD into the seat. The main purpose of this project was to attain some knowledge on dummy positioning, belt-fitting, and simple surface contact using biodynamics simulation software, **MADYMO**.
* Attach a lap-belt to the ATD model (same model as in previous statement) and study the response in a frontal impact collision.

**Group Final Exam (Part of Teaching Assistantship)**



**Modeling Crash Response of an Aircraft Occupant on a General Aviation (Part 23) Passenger Seat**

* Here, dynamic test requirements and the pass/fail criteria were provided for Part 23 passenger seat. Acceleration pulse was provided which is then applied to FUNCTION.XY in **MADYMO** and required plots were taken. Adding a cushion to the bottom seat was the next step (cushion

properties were provided). Depicting kinematic responses in a few instances of time. Eventually,

adding a bulkhead to the model and taking required plots and injury levels were also noted (whether it falls in the range or not!!) to ensure occupant safety.

**Experience in ADAMS**



* Performed a complete kinematic analysis of a web-cutter (crank-rocker four bar mechanism) in which angular position, velocity, and acceleration of the output link VS time were plotted. Also, linear position, velocity, and acceleration of the cutting points were plotted and discussed the results.
* Performed kinematic analysis of thread and needle guiding system of a sewing machine in which path of a particular point was plotted. Also, acceleration of a particular point was taken.
* Simulate retracting of the landing gear of an aircraft. Path of wheel with respect to aircraft was taken.
* Simulate bouncing of a rubber ball and take the path of the center of the ball.
* **ADAMS CAR** Complete Manual was provided with step by step instructions. Need to gothrough it and perform whatever was asked to do!!
* Wheel rolling without slip were modeled in ADAMS and velocities and accelerations were plotted for two particular points.
* **Modeling of a cervical spine** in **ADAMS VIEW** to observe the flexion and extension thatoccurs during frontal and rear collisions of a vehicle.

**Master Thesis**



* Performance Comparison of **Human and Dummy Models** in Various Vehicle Frontal Crash Scenarios based on Federal Regulatory Standards". Here, **MADYMO** is used to take the **occupant** **response and verify the thoracic injuries for both 50th Percentile Hybrid III Human and Dummy**

**models for full frontal, small offset overlap, and oblique impact crash tests** for differentacceleration pulses in three different scenarios:-

1. with airbag and seat belt,
2. with seat belt and no airbag,
   1. without airbag and seat belt. This is performed to compare the impact in these scenarios and verify whether the occupant is safe or not!! Also, **knee forces, lap-belt forces and bending of** **spine** for all different frontal crash scenarios are calculated. **LS DYNA software** is used to take theacceleration pulses for various frontal crash scenarios and is input into **MADYMO** to get the occupant responses for all the different scenarios.

**Programmer Analyst, Cognizant Technology Solutions** **May 2012 – Aug 2013**

* **Designed web pages for the Provider COMCAST**

Used html codes to create web page for the client as an initial assignment.

* **Worked on code error rectification**

Simple error rectification found on COMCAST official webpage as a part of training.

**Activities & Honors**



* In-Plant training at “The Volkswagen” & “The Mitsubishi Motors”.
* Completed Thesis on “Performance Comparison of Human and Dummy Models in Various Vehicle Frontal Crash Scenarios Based on Federal Regulatory Standards”.
* Certified in **German** language course (A2 Level) from GOETHE ZENTRUM.
* Proficient flute player, Avid painter and Martial artist.
* Participated for “All India Environmental Awareness Competition” conducted by the Jim Corbett.