

NINAD MEHTA

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EDUCATION

CAE/FEA Master's Certification, Skill-Lync	June 2020 – April 2021
Master of Science, Mechanical Engineering, University of Colorado Boulder, GPA 3.8/4	May 2020
Bachelor of Technology, Mechanical Engineering, Vellore Institute of Technology, GPA 3.45/4	June 2018

SKILLS

- |             |              |                           |
|-------------|--------------|---------------------------|
| • HyperMesh | • HyperCrash | • Python                  |
| • LS-Dyna   | • FEniCS     | • SolidWorks Simulation   |
| • ANSA      | • ABAQUS     | • Finite Element Analysis |
| • d3VIEW    | • NASTRAN    | • HyperView               |

PROFESSIONAL AND RESEARCH EXPERIENCE

<b>Structural Analysis Engineer, Caterpillar Innovation Center</b>	January 2022 – Current
<ul style="list-style-type: none"><li>Assess the structural integrity of large mining truck frames using quasi-static linear &amp; non-linear FEA.</li><li>Perform non-linear bolted Joint analysis for frame mounted components to evaluate joint integrity.</li><li>Work on durability/fatigue studies using unit load inertia relief technique with flexible body loads.</li></ul>	
<b>CAE Application Engineer, d3VIEW</b>	June 2021 – December 2021
<ul style="list-style-type: none"><li>Perform Material Calibration and subsequently create Material Cards based on LS-Dyna using workflows.</li><li>Develop a workflow to automate GISSMO (Generalized Incremental Stress State Modeling) Failure Modeling for Materials.</li><li>Work on vehicle model development in LS-Dyna and provide support in the field of crashworthiness.</li><li>Create a workflow to convert hyperelastic material data to verified simulation worthy data by running uniaxial tests.</li></ul>	
<b>Research Volunteer, University of Colorado Boulder</b>	June 2020 – April 2021
<ul style="list-style-type: none"><li>Meshing and optimizing mesh quality of automotive components using various Mesh improvement tools.</li><li>Research on translating designs problem to FEA models for failure analysis.</li><li>Conduct basic explicit and implicit analysis on component level problems.</li></ul>	

PRODUCT ANALYSIS EXPERIENCE

<b>Vehicle Crashworthiness Analysis using LS DYNA, HyperCrash, and RADIOSS</b>	September 2020 – July 2021
<ul style="list-style-type: none"><li>Effectuate CAE/FEA simulations to evaluate and enhance crashworthiness performance of automotive components.</li><li>Hands-on experience of linear, non-linear, explicit, and implicit analysis simulations using LS-Dyna and RADIOSS.</li><li>Executed low speed car crash analysis to evaluate Head Injury Criterion (HIC) using a pedestrian dummy head model.</li><li>Setup frontal and side crash of Dodge Neon BIW Model according to FMVSS regulation 208 in HyperCrash and HyperMesh.</li><li>Worked on material modelling of elasto-plastic and hyperelastic materials from raw data.</li><li>Modelled reduced side impact crash test of Dodge Neon based on FMVSS 214P in HyperCrash.</li></ul>	
<b>Pre-processing for Structural Analysis using ANSA and HyperMesh</b>	September 2020 - July 2021
<ul style="list-style-type: none"><li>Meshed an Automotive Suspension Assembly and established connections while maintaining quality criteria.</li><li>Modelled rigid elements, different types of welds, adhesives, spring elements and bolt connectors for FE models.</li></ul>	
<b>Natural Convective flow – Computational Fluid Dynamics</b>	January 2020 - May 2020
<ul style="list-style-type: none"><li>Illustrated the classical mixing of fluid for differentially heated square cavity for coupled temperature-fluid problem.</li><li>Implemented time-varying Natural convection solver in FEniCS using Monolithic solve and Operator Split Solve.</li><li>Demonstrated computational simulation of steady laminar convective flow around inclined plate geometries.</li></ul>	
<b>Re-design of a Measuring wheel – Design for Manufacturability</b>	August 2019-December 2019
<ul style="list-style-type: none"><li>Reverse engineered a surveyor's wheel and re-designed the product to reduce material usage.</li><li>Utilized DFM and DFA to reduce the number components in the product and brought down the overall cost by 14%.</li></ul>	
<b>Research Assistant, Emergent Nanomaterials Lab, University of Colorado Boulder</b>	August 2019 – March 2020
<ul style="list-style-type: none"><li>Focused on synthesis, characterization of novel material – polyrotaxane for making glasses, gels, and polymer coatings.</li></ul>	
<b>Research Assistant, Composites lab, Vellore Institute of Technology</b>	July 2016-May 2018
<ul style="list-style-type: none"><li>Explored Dynamic, flexural and fracture characteristics of the flax fiber and jute fiber reinforced polypropylene honeycomb core sandwich panels.</li></ul>	

PUBLICATIONS

<b>Experimental Investigations on Flexural and Fracture Behaviors of Flax Fiber Reinforced Sandwich Panels</b>
<ul style="list-style-type: none"><li>Published in: <i>International Review of Mechanical Engineering</i>, March 2018</li></ul>
<b>Microstructural Evolution, Structural Integrity, and Hot Corrosion Performance of Nitrogen-Enhanced Stainless-Steel Welds</b>
<ul style="list-style-type: none"><li>Published in: <i>Journal of Materials Engineering and Performance</i>, July 2019</li></ul>
<b>Dynamic Characteristics of Honeycomb Sandwich Beam Made with Jute/Epoxy Composite Skin</b>
<ul style="list-style-type: none"><li>Published in: <i>Institution of Civil Engineers</i>, January 2020</li></ul>

CERTIFICATIONS

- Crashworthiness Analysis using HyperMesh and Radioss, (Credential Id: 3f59t1qgp2xesoza)
- LS-DYNA for Structural Mechanics/FEA, (Credential Id: a21fd4q8bwpv60ck)
- Preprocessor for Structural Analysis using ANSA, (Credential Id: c7j61fuxho9nt382)
- HyperMesh for FEA Plastic and Sheet Metal Applications, (Credential Id: tu31ok60z9e8fhsp)
- Python for Mechanical Engineers, (Credential Id: 0tj36bh9o1ipwsa5)

COURSES

Computational Fluid Dynamics, Finite Element Analysis, Design for Manufacturability, Failure of Engineering Materials, Micro-electro-Mechanical Systems, Microsystems Integration, Polymers, HyperMesh for FEA Sheet Metal and Plastic components, ANSYS edX