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**Raleigh, NC - 27606**

**VIJAI RAHUL VELMURUGENTHIRAN**

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**Professional Summary:**

- Mechanical Engineer majoring in Industrial Engineering.
- Specializing in the field of Production Planning, Supply Chain Management and Quality Control.

**Education:**

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|---|---|---|---|
| **Master of Science in Engineering,** Industrial Engineering | North Carolina State University | CGPA: 3.2* | May 2017 |
| **Bachelor of Engineering,** Mechanical Engineering | Anna University, India | CGPA: 3.4 | May 2015 |

**Coursework:**

| | | |
|---|---|---|
| Quality Engineering | Production Planning, Scheduling and Inventory Control | Supply Management |
| Applied Engineering Economics | Manufacturing Process Engineering | Experimental Statistics for Engineers |

**Software Skill-set:**

- Simulation tools : AutoCAD, Ansys, CATIA, ProE, NX CAD
- Programming Languages : C, C++, R
- Certifications : Master Diploma in Product Design and Analysis

**Academic Projects:**

- **Development of Job Competencies and Training Plan - American Red Cross** **Spring '16**
  - Evaluated and Benchmarked companies to develop profiles and KPIs for key roles in Supply Management Organisation to conduct a Gap Analysis.
  - Conducted market research on skillsets and trainings required to develop a Training module.
- **Forecasting of a Time series Data set** **Fall '15**
  - Analysed a 144 point time series data set for a major U.S airline based on the application of Winter Trend and Seasonality forecasting model adjusted for Exponential smoothing.
  - Achieved and presented the standard deviation within limits in both the Regression model and the Forecast.
- **Analysis of Piston Bowl Geometry in a Single Cylinder CI engine using CFD** **Spring '15**
  - Investigated the effects of piston bowl geometry and dimensions, such as the pip region, bowl lip area, and the toroidal radius on the in-cylinder mixing and combustion process using CFD in Ansys workbench.
  - Proposed an air motion model capable of capturing the physical effect of combustion chamber geometry while significantly reducing the Computational time.

**Industrial Experience:**

- **Volvo Group Trucks** **Summer '16**
  - New Product Development: Automotive Product and Industrialization Intern involved in Marketing, Product Definition, Industrialization and Business case analysis of a Mack Truck.
- **SAE-India** **Fall '11 - Fall '14**
  - Mechanical Engineering: Project in Designing and Fabricating an All Terrain Vehicle with BAJA specifications.
- **Maruti Service Masters** **December '13**
  - Process Engineering: Internship project in the Optimization of incoming Automobile units to develop a Queue Management system.
- **Integral Coach Factory** **June '13**
  - Manufacturing Engineering: Internship Training in Industrial Manufacturing Practices conducted by Advanced Welding Training Institute.

**Publications/Proceedings:** **Fall '13 - Fall '14**

- **Investigation on Compression and Hardness Properties of Abaca and Manila Hybrid Composite**
  - Performed Compression and Hardness Quality tests on samples of abaca and manila composite.
  - Fabricated as per the ASTM D: 256 standards using Hand layup process.
- **Investigation of Mechanical behavior of Glass Fibre based SiC Polymer Composites**
  - Calculated the shear strength, bi-axial stresses for different α values.
  - Produced the best Manufacturing method for GFRP reinforced SiC composite.
- **Analysis of Mechanical Behavior of Glass Fibre / $Al_2O_3$ - SiC Reinforced Polymer composites**
  - Produced $Al_2O_3$ and SiC reinforced composite using epoxy and polyester resin using resin transfer method.
  - Investigated Mechanical properties like impact, hardness, tensile, shear, and bi axial strength using Arcan fixture.