**PROFESSIONAL SUMMARY**

* 10 years of mechanical and software product development and testing experience includes CAE-FEA/CAD expertise in Full vehicle/Component Level Crash, Nastran and Durability analysis, Performance assessment, Rapid concept product development with manufacturing feasibility and expertise in Project Planning & Cost analysis, Product Engineering, and software product development.
* Experienced in Python with ascertained proficiency in using new tools and technical developments (libraries used: libraries- **Beautiful Soup, Jasy, NumPy, SciPy, matplotlib, Pickle, PySide, python-twitter, Panda data frame, networks, urllib2, MySQL dB for database connectivity**) to drive .com
* Involved in all the phases of Software Development Life Cycle (SDLC) including Analysis, Design, Development, Integration, and Implementation of software product and user interface for end-user.
* Skillful in testing and designing User Interfaces for CAE-Software Products. Performed Vehicle evaluation studies through Benchmarking and Quality Function Deployment.
* Hands on experience in developing **web applications** to implement Model View Control architecture using **Django, Flask, Pyramid** and **Zope Python web application frameworks.**
* Skilled at design, code writing, debug operations, reporting, data analysis and web applications utilizing Python.
* Accomplished expertise in Python development under **Linux OS (Debian, Ubuntu, SUSE, RedHat Linux, Fedora).**
* Skilled with **Django, a high-level Python Web framework**.
* Upright knowledge on Object Oriented Programming concepts like abstraction, encapsulation, inheritance, and polymorphism.
* Knowledge on Cloud innovations including Infrastructure as a Service, Platform as a Service, and Software as a service supplier (Iaas, PaaS, and SaaS).
* Proficient at utilization of **Python best Practices (PEP-8).**
* Competent in writing **SQL Queries, Stored procedures, functions, packages, tables, views, triggers using relational databases like Oracle, MySQL, DB2**.
* Efficient in using **editors Eclipse, PyCharm, PyScripter, Notepad++** and Sublime Text while developing different applications.
* Skilled in **developing test automation framework** with **Python scripting & Selenium**.
* Had fair knowledge on using **NoSQL databases like Apache Cassandra (1.2, 2.0 and 2.1), Kubernetes** and **Mongo DB (2.6, 2.4)**, **Orient DBF net**.
* Fairly experienced in **Agile Methodologies, PCI, Scrum stories** and sprints experience in a Python based environment, Data analytics, data wrangling and Excel data extracts.
* Capable in **Shell Scripting** and **UNIX commands**.
* Expertise in analyzing, post processing and countermeasures for frontal crash load cases like USNCAP (FMVSS 208), ENCAP(ECE), SIIHS(FMVSS214), SORB, Side pole 5th & 50th (FMVSS 201) and Rear Impact (FMVSS 224).
* Skilled in CAE model building & Model Setup for Crash analysis using Ansa, Abaqus, Primer, Hyper Mesh, Hyper View, Visual Environment, LS-DYNA and Mesh Works.
* Good knowledge in materials AHSS and UHSS steel/aluminum and BIW manufacturing process like stamping , roll forming , extrusions.
* Professional in assembling Restrain Systems :Airbags, seat belt routing ,Seating Assemblies in vehicle, testing deployment, interaction with Thor Dummies and analyzing the results. Positioning the THOR dummies with respect to SgRP, and FMVSS regulations.
* Optimized BIW design concepts for PHEV , BEV vehicle considering Crash, Durability-ABAQUS and NVH requirements.
* Experienced in Optimization of CAE Models using Ansa Morphing, MeshWorks Morphing and Parameterization.
* Experienced in CAE-explicit and implicit analysis. Excellent analytical and numerical skill to solve automotive engineering applications.
* Created CAE Engineering status reports and verify completeness and correctness of CAE Assessments Optimize the function and cost of forward model systems using CAE Tools Development.
* Expertise in Multi-disciplinary CAE optimization and Lead cross-functional alignment between D&Rs in different functions to comply with the requirements Provide program design alternatives by running DOE CAE Studies .
* Good at using CATIA V5 , Solid works, UG-NX to create and modify 3D data and 2D drawings.
* Worked on DOE, Product Benchmarking and Product development V-Model and Design Failure Mode & Effects Analysis (DFMEA).
* Responsible for DVP&R (Design Verification Process and Report) to validate product design & BOM.
* Worked on vehicle ergonomics-HMI, Occupant Package Design with respect to SAE Guidelines and User Interface Studies. Familiar with Pedestrian Protection System.
* Strong knowledge of DFSS (design for Six Sigma ), PPAP, PFMEA,DMAIC and FMEA principles ,MSA, SPC, FMEA, DOE, 8-D, GD&T, APQP.
* Exquisite in Interpersonal and communication skills, efficient time management and organization skills, ability to handle multiple tasks and work well in team environment.

**EDUCATION**

**Rackham Graduate School - University of Michigan. AUG 2013-APRIL 2015**

M.S. - Automotive Systems Engineering**. G.P.A-3.66/4.0**

**Jawaharlal Nehru Technological University- Kakinada, India AUG 2005 – MAY 2009**

Bachelor’s Degree in Mechanical engineering with Distinction. **G.P.A-3.6/4.0**

**TECHNICAL SKILLS**

|  |  |
| --- | --- |
| Programming Languages | * C, C++, Python-3.7 & 2.7, SQL and Shell Scripting, GTK, Java, Minitab, I-Sight Python, MATLAB 2020a , Simscape, Flowcharts and Simulink, AUTOSAR, LS-PrePost Scripting, , Python Scripting and Java Scripting, Jira, Rally, MS-Project, Primavera. |
| Python Libraries | Python, Django, Flask, Beautiful Soup, httplib2, Jinja2, HTML/CSS, Bootstrap, jQuery, Numpy, Matplotlib, Pickle, Pyside, SciPy, wxPython, PyTables, pdb |
| Frameworks | Django, Spark, web2py, pyramid, Flask, Mongodb, Hadoop/ Big Data and CSS Bootstrap, RASA |
| Technologies | HTML, CSS, DOM, SAX, Java Script, JQuery, AJAX, XML, AngularJS, Version Control GIT (GitHub), SVN |
| Protocols | TCP/IP, HTTP/HTTPS, SNMP, SMTP |
| IDE's/ Development Tools | NetBeans, Android Studio, PyCharm, Eclipse and Sublime Text. IntelliJ IDEA |
| Version Control | GIT (GitHub), SVN |
| Application Tools | Net Beans, Eclipse (SE, EE, Android), Visual Studio, MySQL |
| Deployment Tools | Heroku, Jenkins |
| Tracking Tools | Bugzilla and JIRA. |
| Methodologies | Agile, Scrum and Waterfall |
| Databases | Access, SQL Server, MySQL, Teradata, Oracle |
| Software packages | MS Word, Advanced MS Excel, MS PowerPoint, SQL Plus |
| Reporting Tools | SSRS, Tableau, MS-Word, and MS-PowerPoint. |
| Operating systems | Linux/Unix, Windows Variants |
| Cloud Environment | AWS Services, EC2, ELB, VPC, RDS, AMI, IAM, Cloud formation, S3, Cloud Operating Systems |

* CAE Post-Processor–HyperView, Hyper Graph, Animator, LS-PrePost, META post-processor.
* CAE-Solver – Ls Dyna, Nastran, Optistruct, Abaqus, ANSYS.
* CAE Pre-Processor–ANSA, Hyper Mesh, Creo Simulate, Primer, Abaqus-implicit ,explicit, Visual-Environment, MESH-WORKS.
* Morphing Tools – Ansa, Mesh Works.
* CAD Tools–AutoCAD, CATIA, ProE-Creo, UG-NX, Solid works.
* System Engineering and Benchmarking QFD (Quality Function Deployment chart), DFSS,DFMEA,GD&T,APQP.

Windows, Linux, Microsoft Office, Microsoft Project, Siemens Jack, Teamcenter.

**PROFESSIONAL EXPERIENCE**

**PROJECT MANAGER**

**ASPIRE TECHNOLOGIES OCT 2019-NOV 2020**

* Worked as a primary point of contact for all technical activities include presales, technical support, consulting, and training for software products.
* Experienced in project requirement analysis, project bidding/contracting evaluations, Risk Management & Project Control, Project Planning, Scheduling, Controlling, Cost estimation.
* Involved in updating inefficient customer processes to efficient processes using automation.
* Supervised and involved in the Analysis, Design, Coding and Testing of the application and participated in meetings for gathering requirements.
* Experienced in branching, tagging, and maintaining the version across the environments using version control system tools like CVS, SVN, GIT on Linux and windows platforms.
* Developed and managed work breakdown structure (WBS) of projects in JIRA, MS-Project and Primavera.
* Monitored the performance of project team members, provided and documented performance feedback.
* Highly skilled at allocation of duties, responsibilities, and spans of authority to project personnel.
* Consulted with project stakeholders or suppliers to obtain resources or materials.
* Established and executed a project communication plan.
* Prepared project status reports by collecting, analyzing, and summarizing information and trends.
* Monitored or tracked project milestones and deliverables.
* Liaise with end clients and the development teams to define software requirements. Assist the development team to understand client requirements in order to customize and implement software solutions.
* Proficiently worked to Identify and find qualified and suitable personnel from inside and outside the company to satisfy the specific needs of the end client and coordinate the recruitment and selection of personnel for specific projects.
* Demonstrated highest skill to prepare and deliver complicated technical presentations that explain services to existing and prospective clients; and provide technical and non-technical support and services to clients or other staff members regarding the use, operation, and maintenance of various IT applications.
* Established communication plans to execute project through Excellent resource planning and task scheduling skills. Prepared project status reports by collecting, analyzing, and summarizing information and trends.
* Mastery over day to day work related activities performing in different operating systems(Windows/Linux/AIX), network administration and service desk administration.
* Exhibited keen aptitude on developing automation activities using Python and Java scripts.
* Evaluated project risks and triggers, performed quantitative and qualitative analysis by providing project risk mitigation plans and procedures.
* Develop new application modules using backend tools such as Java/J2EE, Spring MVC, Webservices which includes Soap and Restful.
* Prepared organized documents and presentation to train software developers in Python, Java, MATLAB Scripting and C and C++.
* Verified application results by conducting system audits of technologies(Java, C, C++ and Cloud Database) implemented.
* Expert in written and verbal communication skills to coordinate with team members and management and explain technical issues.
* Exhibited analytical and problem-solving skills to handle any issues that occur during project completion.
* Had complete understanding of organization and time management skills to keep projects on track and within budget. Monitored or tracked project milestones and deliverables.

**PROJECT ENGINEER -CAE/Product Development**

**Detroit Engineered Products DEC 2018 – FEB 2019**

**850 E Long Lake Rd # A, Troy, MI 48085**

* Accomplished Bus load cases by meeting targets . Successful designed new cross members & gussets for Nastran analysis. Shape & gauge changes performed by Benchmarking. Designed CAD for optimized parts.
* Involved in Project planning and cost analysis for the newly designed cross members. Implemented GD&T for updates.
* Involved in leading Product Engineering activities for cost savings projects, involving supplier changes & design reviews, validations.
* Experience in modeling and simulation of electric vehicle powertrain
* Strong background in model-based System Design in MATLAB/Simulink environment
* Knowledge in auto-code Generation in Matlab/Simulink environment
* Involved in leading Product Engineering activities for cost savings projects, involving supplier changes & design reviews, validations.
* Appraising the client, design engineers and suppliers about weekly progress of the project and discussing with new design development & manufacturing feasibility.
* Executed several CAE- automations and LS-PrePost software scripts for the reduction of the work.
* Project management, database admin, network administration, and business analysis
* Software testing, designing, and coding by using the project management life cycle.
* Identifying the business requirement, system goals and fulfill end user requirements.
* Working with software developers and project support teams
* Project planning develops tests processes and test cases.
* Provides factory test support for new and existing products.
* Involved in development of the user interface design for Meshwork’s software and PrePost.
* Experienced in configuring the operating systems on client and server machine.
* Solid understanding of system/component design/development processes. Familiar with git version control
* Appraising the client, design engineers and suppliers about weekly progress of the project and discussing with new design development & manufacturing feasibility.
* Executed correlation between Nastran and Durability sedan models Using MATLAB and Python Scripting. Post processing done for the NVH and Durability models with different weld types. Stress and Normal Modal analysis are performed.
* Meshed several parts of the vehicles and updated bolting connections during modifications for several simulations.
* Responsible for drawing releases, BOM and ECR. Assembled teams to help streamline release process.
* Responsible for design and reverse engineering of Engine products from concept to release. Products include Engine, Rotors (Full Cast, Unicast, Drum-In-Hat & Composite), Drums, Master Cylinders, and hoses etc.

**SAFETY ENGINEER-CAE**

**Fiat Chrysler Automotive LLC APR 2016 - DEC 2018**

* Implemented Shape, gauge, material and Design changes for Front Rails, Shotgun, crush cans, cross members, tunnel, and other frontal members of various vehicles to meet USNCAP,ENCAP, Narrow-Offset targets .
* Analyzed durability/fatigue life of the sheet metal components and the spot welds using transient dynamic virtual road loads.
* Perform Structural analysis (linear static, Modal, Transient, Frequency Response) on full vehicle body-in-white and sub-systems using advanced CAE/FEA tools.
* Successfully implemented Material and Gauge changes on Door Ring, B-pillar & its reinforcements and Roof-rails and crossmembers to meet Side-IIHS and Roof crush on different vehicles.
* Optimized Pedestal design for the Front end of Vehicle meeting Full frontal crash.
* Performed Noise Vibration Harshness analysis on modified crash models and assessed performance through modal analysis.
* Involved in Packaging powertrain for the new sedan program.
* Performed Topology Optimization on the Battery Side extrusion to save the mass and performance enhancement.
* Morphed the old BIW theme to Designer theme using Morphing Tools and debugged model runnability for USNCAP.
* Designed New Cradle which suits for new configured vehicle from existing cradle and generated CAD.
* Accomplished IIHS side pole 5th and 50th load case targets within the 40G for the Bolting locations for Battery Vehicle & gap between cells to extrusion wall is preserved by Shape, Gauge, Material and Design changes for the Battery casing cross members.
* Professional in Packaging the Battery Module on to the BEV&PHEV and Optimized the battery outer wall extrusion for mass reduction of the Battery pack (Aluminum) by gauge and material changes. Designed Crush enablers for the Battery Casing Cross members.
* Optimized Vehicle mass for various systems like BIW, Chassis and Closures.
* Successfully established correlation between the dummy reactions in terms of Head injury criteria, Brain Injury Criteria and Tibia Loads to that of the vehicle structural responses for Oblique load case analysis on Truck and SUV Model with Thor Dummies & safety restraints.
* Actively involved in complete product design process with predictive analyses by utilizing CAE models to implement and communicate design changes needed to meet functional and performance targets.
* Expertise in assembling the vehicle components like air bags, seats, positioning of barrier, Structural Morphing, Positioning the THOR dummies, seat belt routing and creation of contacts and updating.
* Design of Experiments (DOE) are performed to analyze results and to finally establish best vehicle configuration which meets targets.
* Have fair knowledge in Material joining process like spot welding, tailor rolled welding and riveting.

**PROJECT ENGINEER -CAE /Product Development**

**Detroit Engineered Products MAY 2015 – APR 2016**

**850 E Long Lake Rd # A, Troy, MI 48085**

* Proficient in Cad clean up, BIW meshing, connections, contacts, control cards, Model debugging & Runnability.
* Experienced in optimizing the Composite Material, Aluminum BIW - shape, gauge, material changes and incorporating and Designing crush enablers on Electric Battery vehicle for meeting US and European safety regulations.
* Accomplished Mass optimization and target performance with manufacturing feasibility on different Vehicles.
* Worked on 3-point bending test for the B-pillar and optimization is performed using gauge, material and shape changes. Bumper Optimization for narrow offset crash analysis.
* Performed several DOE for optimizing the full vehicle in meeting safety regulations.
* Optimized SUV’s Running board stress and strain through Linear Structural analysis and fatigue life using Abaqus.
* Worked with Product Development team to develop, optimize corresponding test plans for Engine development.
* Worked on design and development for 4-cylinder engine and its release to customer.
* Experienced in optimization of BIW stiffness Normal mode analysis find the Torsion and Bending stiffness using Nastran.
* Experienced in Head impact analysis on Vehicle interiors-instrument panels using FMVSS-201U.
* Worked as primary point of contact for all technical activities include presales, technical support, consulting, and training for Computer Aided Engineering (CAE) systems.
* Running solver benchmarks. Identify custom solutions, additional training, and special attention.
* Involved updating inefficient customer processes to efficient processes using CAE automation.
* Interaction with the Development and Marketing teams during preparation phase for deployment.
* Organized and conducted onsite User Acceptance Testing for Beta versions of CAE systems.
* Supported simulation activities in the design community.
* Identified and prioritized strategic long term and short-term technical activities in support of accounts.
* Coordinated meetings with technical counterparts to execute the planned activities at customer sites.
* Customers are acknowledged with technical skills through enhanced training.
* Established support processes and metrics for the account using JIRA workflows.
* Reviewed account technical support activities and metrics to ensure appropriate follow-up, recognizing usage trends and training needs.
* Executed various User interface design testing is and successfully involved in development of the CAE-tool-User Interface.

**Graduate Student Instructor**

**Rackham Graduate School - University of Michigan AUG 2014 – APR 2015**

**4901 Evergreen Rd, Dearborn, Michigan-48128**

* Trained undergrad students in manufacturing process labs , Design software’s and 3d Printing technology.
* Conducted research testing on different material components for stress & strain analysis in Abaqus.

**Sr. Engineer in Planning /CAD**

**PowerMech Projects Ltd, Hyderabad, India**. **SEP 2010 – MAY 2013**

**Plot No 77, Jublee Enclave, Opp. Hitex, Madhapur,** **Hyderabad - 500081,Telangana, INDIA**

* Planned erection schedules for boiler and its auxiliaries and Electrostatic precipitators and their alignment, commissioning and providing clearances and updating DVP&R.
* Experienced in project requirement analysis, project bidding/contracting evaluations, Risk Management & Project Control, Project Planning, Scheduling, Controlling, Cost estimation.
* Worked with design teams for modifications of the boiler and its auxiliary’s components and working bill of materials (BOM) and geometric dimensioning & Tolerance (GD&T).
* Developed and managed work breakdown structure (WBS) of projects.
* Monitored the performance of project team members, provided and documented performance feedback.
* Allocated duties, responsibilities, and spans of authority to project personnel.
* Consulted with project stakeholders or suppliers to obtain resources or materials.
* Established and executed a project communication plan.
* Prepared project status reports by collecting, analyzing, and summarizing information and trends.
* Monitored or tracked project milestones and deliverables.

**Post Graduate Diploma in Computer Applications JUL 2009 – JUL 2010**

* Underwent through training for various computer applications which includes computer overview and flow charts, C language, OOPs concept, Core Java, Oracle.
* Trained for Desktop applications like MS office and Excel with VBA.

**Faculty in CADD Centre Pvt.Ltd, Dilshuknagar, Hyderabad. JUL 2009 - AUG 2010**

* Work involves teaching AutoCAD, Catia-V5, PRoE, UG-NX software’s and guided students in their projects.
* Designed small scale project to demonstrate students. Evaluating the student exercises.

**Academic Projects**

* System Engineering in Future Vehicle Development of MAZDA sedan for 2019 involves several benchmarking techniques and Cascaded the customer requirements into system level, sub-system level and product level.
* Infotainment systems evaluation through Benchmarking & Quality Function Deployment (QFD) and UID criteria. Developed Test Plans and user case scenarios. Developed better infotainment system.
* Re-designing of the user interface design for the restaurant web-based menu by following usability criteria and Heuristic Evaluation.
* Developed software code in C++ code using OOPs concept for input the student data and extraction based on student identification and used SQL for storing data in terms of tables.
* Factors affecting DOOR-Slam Noise through Design for Six Sigma approach- DMAIC and FMEA principles. Minitab was used for quantitative data analysis.
* Project planning is executed for MRC-project which includes activities enlisting, calculation of critical path, Gantt Chart preparation, Resource requirement table, total budget for the project, cumulative budgeted cost curve ,Risk assessment table with Response plan and Cost performance index.
* Developed RFP/RFQ for the Recreational Boat club which includes statement of work, and evaluation criteria.
* **Occupant Package Design**: Took Honda Civic-2013 model as reference vehicle and applied Benchmarking Technique with respect to same segment vehicles Hyundai Elantra and Toyota Corolla. Finally designed a new car with interior and exterior dimensioning using SAE Guidelines and keeping view of anthropometric data of population. Finally, the new car exterior and interior layout dimensions are specified using SAE J1100 guidelines. Includes placing the Human machine interface (HMI) (SAE J826), Seating reference point (SGRP) (SAE J1517), Driver Ellipse Location (SAE J941), and Head contour ellipsoid centroid and Driver Hand reach controls for age groups.
* **Exterior and Mechanical Package Evaluations:** In this project, studied Honda Accord engine for learning various subsystems and decomposed engine into various subsystems, prepared interface diagram and interface matrix which helps the engineer to give right connections. Learnt various trade-offs like packaging the engine chunk, how package engineer must be in constant touch with all the engineering departments in order have better communication and to achieve best objective for packaging a chunk to give customer-oriented product with engineering values and with various guidelines from standard organizations.
* Infotainment systems evaluation through Benchmarking & Quality Function Deployment (QFD) and UID criteria. Developed Test Plans and user case scenarios. Developed better infotainment system based craftmanship and perception.
* Executed Normal Modal analysis for Aircraft wing in Abaqus . First 6-modes of normal modes are analyzed.
* Performed Pre-stress analysis on Frame, is called as coupled analysis. The static stress analysis out is given as input to the Modal analysis and first 6-modes are calculated and analyzed in Abaqus.
* Built Thermistor based cooling fan using Simulink.
* Plotting and analyzing results for the Simscape and Simulink based Mass-Spring-Damper systems.
* Developed 2d-Robotic Arm animation using MATLAB code.
* Successfully executed MATLAB code for NASA Thermodynamic data parsing and organizing the species into folders
* MATLAB code is developed for stalagmite function using Genetic Algorithm.
* Utilized functions like ode45, anonymous function to develop the animation for simple pendulum by writing code in MATLAB.
* Worked on the state flow charts for developing Manual Gear Transmission system and Washing machine working.

**LEADERSHIP**

* Vice President of SME chapter University of Michigan Dearborn(2014-2015).
* Member of National Society of Leadership and Success, University of Michigan Dearborn Chapter.
* Vice-captain of hockey Team in Sainik School Korukonda (High school) from 2002-2005, Vizianagaram, India.
* Participated in All India Sainik School Mountaineering Expedition in the Year-2004 and scaled *Manali* *Peak (5669 m above sea level)*, India.