**Aravinda Subramanian G**

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**Summary**

* **I would describe myself as a person who is dedicated in completing the task at hand with perfection, in the simplest way possible with quality being the priority.**
* Goal oriented - team player, pursuing Bachelor’s in Mechanical Engineering, interested in Product Development, Design and CFD related positions to employ my technical skills and sharpen them.
* The combination of Industrial and Mechanical background facilitates my critical thinking and enhances my problem-solving ability and demonstrated academic achievement.

**Education**

**Masters certification program in Hybrid Electric Vehicle Design & Simulation, SKILL-LYNC** (Apr 2019 - Present)

**B.E. Mechanical Engineering, Meenakshi Sundararajan Engineering College, Anna University, Chennai**  (May 2019)  CGPA- 7.97/10

**Zion Matriculation Higher Secondary School,** Grade – 94.25/100(May 2015)

**Course Projects**

**Advanced CFD Meshing using ANSA (**Jun 2019 - Present**)**

**Structural Meshing of an IP Substrate**

* Generating quality mesh of an **Instrument Panel Substrate** for various **FEA Analysis.**
* Experimenting various **Mid-skin techniques** to cross-examine the **quality** of **extracted iterations.**
* Manipulation of **Quality Criteria & Mesh Parameter** characteristics to meet the requirements.

**Structural Meshing of a Bonnet for FEA Analysis**

* Rendering **Mid-Plane, Skinning** & **Hemming** of car bonnet for **FEA Analysis.**
* Turning **solid description** of a **thin part** into a **thin shell description** by **isolating** the outer or the **inner skin.**
* **Surface checks** are performed for the **FEA analysis**; **Quality Criteria & Mesh Parameters** are **regulated.**

**Meshing an entire BMW M6 model**

* Experimentation of tools & its functions & Mesh Parameters, Quality Criteria, Checks Manager.
* Creation of hollow surfaces on the inside to compute **flow characteristics** & integration of many PIDs into one single volume & segregation of many individual PIDs into groups of PIDs for ease of access.
* Rendering a real-time **wind tunnel set up** to simulate **external aerodynamic characteristics** of the car.

**Surface Wrap of an Engine Assembly**

* Surface wrapping is done to reduce the detailed model to minimise the computational cost & time for meshing.
* **Merging all three components** of the engine assembly to run a **trace** and render i**ntermediated surface** for a single volume PID.
* Eliminating control volumes to **extract a 3D mesh.**

**Volumetric Meshing** of a **TURBO CHARGER** using **ANSA**

* **Dynamic meshing** **techniques** with varying unit lengths for smooth intersections of such mesh cells.
* Rendered the surfaces of the given model to extract **VOLUMETRIC MESH.**

**Introduction to CFD using MATLAB and Open Foam (**Apr 2019 – Jun 2019**)**

**Steady & Unsteady State 2D Heat Conduction**

* + Developed a 2D solver in MATLAB to solve heat conduction equation, implemented a transient and steady state solver using **iterative technique (Jacobi, Gauss, SOR).**
  + Steady vs unsteady analysis with **implicit & explicit** time integration.
  + Implemented **diffusive CFL number**-based time step control.

**Simulation of Super Sonic Nozzle Flow Using Mac-Cormack Method**

* Create a MATLAB code to solve 1D governing equations in the **conservative** and **non-conservative form.**
* Implemented **Mac-Cormack method** for **second order time accuracy**& a Courant number-based time step controller.

**Simulation of Flow through a Pipe in Open Foam**

* + Developed the MATLAB code to generate blockMeshDict file for a sector of the pipe.
  + Implemented symmetric boundary condition due to axisymmetric of flow and assigning proper boundary and initial conditions.
  + Results are evaluated and inferred with the Hagen Poiseuille equation.

**Production Capacity Improvement (** Feb 2019 – Mar 2019)

**Daimler India Commercial Vehicles Pvt. Ltd**

* Process study was made in Engine assembly line with the help of the SWI/JES book.
* Designed fixture attachment for piston sub assembly of MDE using CATIA.
* The tools of the Value Engineering were used to improve the value of the product and reduce the cycle time of the Engine assembly.

**Design and Fabrication of Atv for SAE M-Baja (**Apr 2018 – Jul 2018)

* Worked with a team of 25 members in the development of an All-Terrain Vehicle based on SAE Baja standards.
* Worked with the powertrain team to design and assemble drive train of the ATV.
* Performed Design Failure Mode & Effect Analysis (DFMEA) to analyze design and mitigate risk.

**Design and Fabrication of Zero Turn Radius Vehicle (**Jan 2018 – Apr 2018)

* Performed initial survey for the insights on zero turn radius vehicle. Compared existing models and parameters.
* Designed a new model using CATIA V5 and fabricated it.

**Internship**

**Project Intern**, **Daimler India Commercial Vehicles Pvt (**Feb 2019 – Mar 2019)

* Worked with practical insights on MDE & HDE block line to improvise the industrial ergonomics.
* Achieved a significant reduction in cycle time for MDE from 8 minutes to 7.5 minutes.
* Developed and implemented work instructions for the shop floor based on time measurement analysis.

**Inplant Training, TVS Motor Company**  (May 2018)

* Learnt the vehicle manufacturing process from scratch to assembly for two & three wheelers.
* The knowledge about various techniques of TQM like kaizen, 5S, six sigma were grasped.

**Summer Intern, Integral Coach Factory (**Nov 2017 – Dec 2017)

* Analyzed manufacturing methods of New Gen LHB coaches, CBC mechanism, welding techniques and process flow in the shop floor.

**Publication & Presentation**

**International Journal of Advance Research in Basic Engineering, Science & Technology (IJARBEST)** (Jun 2019)

Presented a paper on “**Opposed Piston Engine**” in the **E-Cube** event which lasted for 2 days conducted by **(**Jul 2016)

“**Meenakshi Sundararajan Engineering College”**.

Presented a Project Planning report on “**Zero Turn Radius Vehicle ”** in the event conducted by (Jul 2017)

“**Meenakshi Sundararajan Engineering College”.**

**Extracurricular / Leadership Activities**

* Won the Intra level college cricket tournament.
* Top 50 in Chess open district tournament.
* Student Coordinator at **YANTRA 2K17**, National level symposium.

**Software Packages**

* Modelling: Creo, SolidWorks, CATIA V5
* Computational Analysis: ANSYS, MATLAB, NASTRAN, ANSA
* Statistical Data Analysis: MS-Excel