GAURAV BHATT

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Field of Interest

CFD Application, CFD Code Development, Meshing, 3D Modeling

Work Experience

- **Integrative Design Solutions P. Ltd.,** CFD Engineer 01/2020 – till date
  FloEFD, SolidWorks, Open FOAM, Building HVAC Design, Thermal Comfort Parameter, ASHRAE
- **Skykeeper Private Limited,** Design Engineer 08/2018 – 12/2019
  Product Development, Various Projects using Ansys Fluent, SolidWorks, ICEM, ParaView, TecPlot
- **Simulation & Innovation Engineering Solutions P. Ltd.**, Masters Intern 02/2018 - 08/2018
  Analysis of various unstructured discretization schemes for convection and diffusion terms using FORTRAN.
- **Simulation & Innovation Engineering Solutions P. Ltd.**, Masters Intern 06/2017 - 07/2017
  Analysis of steady, inviscid flow in a Converging - Diverging verification nozzle on HiFUN.
- **Emco Electrodyne P. Ltd.**, Design Engineer 04/2013 - 08/2016
  Worked on HT Motor, Roebel Bars, DC and AC Motor coils, Armature design, Rolls (for textile industry) using SolidWorks, Driveworks

Educations

- **University of Petroleum & Energy Studies, Uttarakhand, India** **2016-18**
  MTech, Computational Fluid Dynamics (CFD), 71.10%

  Selected coursework: Finite Difference & Finite Volume Methods, Finite element method, Compressible flows, Heat & mass transfer, Fluid dynamics, Turbulent flows, Multiphase flow, Combustion, Geometric modelling & Grid generation and CFD Applications.
- **Desh Bhagat Engineering College (DBEC), Punjab, India** **2007-11**
  BTech, Mechanical Engineering, 68.03%

  Selected coursework: Strength of Materials, Theory of Machines, Thermodynamics, Machine Design, Fluid Mechanics and Heat transfer.

Expertise

- CFD process: Worked on software for 3D Modelling and meshing as a part of pre-processing then solving the required equations on robust solvers or code for flow and thermal analysis. Finally visualizing the data for colourful result using various post-processing software.
- Programming: Robust Discretization schemes are essential requirement for industrial based solvers. worked on various unstructured discretization schemes like Diamond Path Reconstruction for convection and diffusion terms. Analysis done for various model grids depicting boundary layer and flow field using Fortran.
- SolidWorks: 6.5 yrs. hands on experience on SolidWorks. Have worked on large assemblies, Part modelling, Drawing, Surfacing, Sheet Metal, Weldment, rendering modules. Also, used configuration publisher and Driveworks explorer for automation. x-FEM based CAE structural analysis on part models.

Projects

- Analysis of 2-D Lid driven cavity using Fortran.
  - Finite-difference based discretization of artificial compressibility equation
- Error Analysis & Positivity analysis of various discretization schemes for robust finite volume based industrial solver using FORTRAN.
- Analysis of Axial Compressor using 65(10) airfoil
  - Using TurboGrid, CFX-Pre, Solver, Post-process
- Validation of HiFUN Solver on Benchmark Problems:

    - Transonic turbulent flow past: RAE2822, NACA0012, OneraM6 Aerofoils
    - Periodic flow over VKI turbine, Laminar flow in Lid Driven Cavity, Unsteady pitching motion of NACA0012 Airfoil.

- Projects Undertaken at Emco Electrodyne P. Ltd.:
    - Automation & Standardization of HT Motors (CACA type) up to 500mm Centre height on SolidWorks & Driveworks.
    - Designing of Roebel Bars (Turbo Coils) on SolidWorks (SW).
- Projects undertaken at Skykeeper Private Limited:
    - Study of stresses on Multicopter using a 3D Model.
    - Study of pressure distribution on Fixed Wing UAV.

Industrial Training

- Bharat Heavy Electronics Limited as Trainee, Haridwar, Uttarakhand, India 01/2011 - 07/2011
    - Awareness about the various processes of Central Foundry and Forge Plant (CFFP) & Heavy Electricals Equipment Plant (HEEP)**.**
- Bhushan Power & Steel Limited as Trainee, Chandigarh, India 06/2009 - 08/2009

Computer skills

- Environments/Languages: Linux, Windows, MacOS, Fortran, Python, C, C++, Visual Basic, Oracle
- CFD Software: Fluent, CFX, HiFUN, COMSOL Multiphysics, Ansys-Icepak, Star-CCM+, FloEFD
- Meshing Software: ICEM, ANSYS: Meshing, Hypermesh, Fluent Meshing
- Modelling Software: SolidWorks (CSWA: C-EE7FCQB99B), Catia, AutoCAD, Pro-E, Creo
- Office Suites: MS Office, LibreOffice, Google Documents
- Other Software: ParaView, TecPlot, Gnu Plot, MATLAB

Other details

- Languages: English, Hindi
- Good communication skills gained through my educational environment and work experience.
- Creative with effective interpersonal skills and organizational abilities.
- Quick learner with high grasping power.
- Ability to work under pressure in time-sensitive, fast-paced environment and Strong aptitude for team work.