Respected var1,

I’m currently working at Essar oil UK as a data science intern. I completed my MSc in Computational Fluid Dynamics with distinction at Cranfield University in the UK. I have completed my 4-year undergraduate degree in Mechanical Engineering from Mumbai University in India. I read about the job position as var2 at var3 and found it very fascinating and matches with my interest and experience.

I am very passionate to learn more about CFD application in var4. My MSc at Cranfield University bring me a strong experience in simulations and programming in MATLAB, Python and FORTRAN. My intern at Essar oil UK gives me an insight knowledge on application of machine learning and monte carlo simulations using python. I have run numerous simulations on local computers as well as high-performance computers. I am comfortable using Redhat Linux, Kali Linux and Ubuntu.

My master’s thesis project was with AIRBUS to simulate fuel tank leakage test using a compressed air-helium mixture within the wing fuel tank of the A320. I have manually generated mesh up to 41 million cells with internal boundary layer and have performed transient simulations with more than 120,000 iterations on HPC. Also, I have conducted grid convergence study to validate the results.

My best skill is manually generating structured, hybrid as well as unstructured mesh on complex geometries (3D Ahmed body, helicopter rotating blade NACA 0012, aerofoil NLR 7301, etc) in pointwise. I have also generated 2D mesh on ICEM CFD but have preferred pointwise for complicated 3D grids. I have generated innumerable grids with low equi-angle skewness, appropriate boundary layers according to Y+ value. I follow top to bottom approach while creating grids with sensible coarsening rate according to Roache for appropriate GCI, i.e. performed GCI on RAE 2822 aerofoil and validated many other CFD cases.

I demonstrate profound understanding of CFD solvers, numerical schemes, turbulence models and wall functions. I have performed steady-state, transient, multi-phase, frame-motion, rotating wing simulations. I have an insight understanding of RANS, LES and DNS model according to energy cascade diagram. I have performed RANS, LES and DES simulations with appropriate boundary condition and turbulence models. Owing to my interest in CFD, I have experience using ANSYS Fluent, Star-CCM+ for performing simulations. Moreover, for CFD post-processing, I am comfortable using Tecplot360ex, Paraview and ANSYS Fluent. Furthermore, I am comfortable using MATLAB for signal processing, Python for machine learning, and Latex for documentation. I have written FORTRAN codes to solve numerical methods in CFD, implement algorithms in compressible flows, implementing different schemes in SIMPLE algorithm etc.

I have listed complete academic projects along with a brief description of my technical skills in the curriculum vitae I am applying for the job position as var2 at var3. I would like to work at the var3 and gain exposure in var4 that will define my foray in future career. I’m self-motivated and keen to pursue further career in the field of var4. I assure you of productive work and promise 100% sincerity on my part.

Yours sincerely,

Sachin Bhoi