

Dynamic programming and computational fluid dynamics

Dr Rahul CS (rahulcs@iitgoa.ac.in)
School of Mathematics and Computer Sciences, Indian Institute of Technology Goa

Dr Y Sudhakar (sudhakar@iitgoa.ac.in)
School of Mechanical Sciences, Indian Institute of Technology Goa

The knowledge of the dynamics of two-phase fluid flows is important in many engineering fields including aerospace, automobile and energy sectors. Due to the challenges associated in conducting physical experiments, computational fluid dynamic (CFD) simulations are widely used in understanding the dynamics of two-phase flows. One of the major challenges in simulating two-phase fluid flows is the accurate representation of the interface between two fluids.

This project focuses on implementing the well-known dynamic programming technique for accurately capturing the interface. The intern will develop C++ codes and parallelize the same using message passing interface (MPI) as the parallel programming paradigm.