

Dileep Nackathaya

<https://github.com/dnackat/>

<https://www.linkedin.com/in/dnackat/>

Email : dileepbn@gmail.com

Mobile : +91-7899129478

EDUCATION

- **North Carolina State University** Raleigh, NC, USA
Master of Science in Mechanical Engineering; GPA: 3.75/4.00
Specialization: Computational Fluid Dynamics (CFD)
Aug 2010 – Dec 2012
- **Visveswaraya Technological University** Belgaum, India
Bachelor of Engineering in Mechanical Engineering; Grade: First Class (74%)
Sep. 2006 – July. 2010

CONTINUOUS LEARNING

- **Coursework (edX, Coursera, Swayam) and projects** Udupi, India
Pursued on my sabbatical from the industry (progress documented on LinkedIn and GitHub) Jan 2018 – Present
 - **Thermal and Fluid Sciences, Mathematics Courses:** Computational Fluid Dynamics using FVM, Calculus Applied, Advanced Fluid Mechanics, Multivariable Calculus, Vector Calculus for Engineers, Linear Algebra
 - **CFD simulations on open-source CFD codes, CAD packages, and meshers:** Performed CFD simulations using OpenFOAM and code_saturne with geometries created in FreeCAD and Salome, and meshed with native meshers, cfMesh, and gmsh.
 - **Stastics, Data Science, and Programming:** Completed certificate courses in probability theory, statistics, machine learning, and data analysis offered by MIT on edX. Other courses: Using Python for research, Introduction to Computer Science and programming using Python, Unix Workbench.

EXPERIENCE

- **John Zink Hamworthy Combustion** Tulsa, OK, USA
Computational Fluid Dynamics Engineer, R & D Group Jun 2013 – Aug 2017
 - **Simulation and Analysis:** Created CFD models of industrial burners, flares, thermal oxidizers, and vapor recovery systems and analyzed simulation data. Prepared customer reports on findings of these analyses.
 - **Product Development:** Leveraged data from CFD simulations and analyses to provide insights on designing new products and improving existing ones.
 - **Troubleshooting:** Analyzed data from customer sites and ran simulations to troubleshoot on-site product issues.
 - **Skills/Tools:** Star-CCM+; Ansys Fluent; RANS and uRANS; $k - \epsilon$ and $k - \omega$ turbulence models; EBU, PPDF, and FGM combustion models; Python; Linux
- **North Carolina State University** Raleigh, NC, USA
Graduate Research Assistant, Computational Combustion and Energy Sciences Lab Jan 2012 – Jul 2012
 - **Numerical Simulation and Analysis of Reacting Flows:** Used the Pencil Code, an open-source MPI code written in Fortran, for Direct Numerical Simulation (DNS) of auto-ignition in hydrogen-air mixtures to study the effects of turbulence intensities and length-scales on flame characteristics as a part of Master's thesis research.

ACADEMIC PROJECTS

- **Development of CFD codes on MATLAB:** Generated finite-volume solutions for Poisson's and Navier-Stokes equations with rectangular and curvilinear meshes.
- **Numerical Modeling of Slow Axonal Transport using COMSOL Multiphysics:** Solution of the governing equations of transport of cytoskeletal elements in axons by numerical integration on Comsol package to understand the dependence of their time evolution on various model parameters.
- **An Experimental Study of Drilling on HCHCR-D2 Steel (B.E. Project):** Compared conventional drilling and helical milling approaches on a CNC and studied the effects of tool type and vibration on surface finish and tool wear.

TECHNICAL SKILLS

- **CFD Codes:** Star-CCM+, Ansys Fluent, OpenFOAM, code_saturne
- **CAD Packages:** SolidWorks, FreeCAD, Salome, Ansys DesignModeler
- **Programming and Scripting Languages:** Python, Matlab/GNU Octave, C, Fortran, Shell
- **High Performance Computing:** Used AWS and company/university clusters to perform large parallel computations
- **Relevant Graduate Coursework:** CFD, Combustion, Turbulent Flows, Thermodynamics, Convective Heat Transfer, Compressible Flows, Acoustic Radiation