

Siva Viknesh

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EDUCATION

Scientific Computing & Imaging Institute, University of Utah, Utah, USA

Ph.D. in Mechanical Engineering, CPI : 3.97/4

Aug. 2022 – . Present

Thesis : **Deep learning for Unsteady fluid flows**

Indian Institute of Technology, Kanpur, Uttar Pradesh, India

Master of Science (By Research) in Aerospace Engineering, CPI : 8.33/10

Jan. 2018 – June. 2020

Thesis : **Control of separated flow on a symmetric airfoil by pitching oscillation**

Advisor: **Prof. Kamal Poddar & Prof. Tapan K. Sengupta**

- Developed a **Data-driven Aerodynamic model** for a pitching airfoil on Fourier basis.
- Developed **2D - Orthogonal grid generation** Fortran code.
- Developed **2D DNS/Implicit LES Compressible Parallel Fortran solver** in FDM framework.
- Developed MATLAB code to evaluate the **Spectral resolution of numerical derivative schemes**.
- Performed **Unsteady Pressure measurements, Hot-wire and Time-resolved PIV experiments** on an oscillating airfoil.

Anna University, Tamilnadu, India

Bachelors of Engineering in Aeronautical Engineering, CPI : 8.30/10

Aug. 2012 – Apr. 2016

Thesis : **Numerical simulation of fluid flow over a rectangular wing with wingtip slots**

Ramnagar Suburban MHSS, Coimbatore, Tamilnadu, India

Class XII, 85.83%

May, 2012

KPM MHSS, Coimbatore, Tamilnadu, India

Class X, 87.60%

May, 2010

WORK EXPERIENCE

Aerodynamics Engineer,

The ePlane Company, IIT Madras, India

Sep. 2021 – Aug. 2022

- **URANS simulation** on 3D full-scale models to evaluate aerodynamic performance and static stability.
- Developed **UDF programs** to generate unsteady freestream for calculating **dynamic stability derivatives**.

Senior Research Associate,

Low Speed Aerodynamics lab, IIT Kanpur, Uttar Pradesh, India

Jan. 2021 – Aug. 2021

- **Experimental investigation of fluid flow over an oscillating body.**
 - Utilizing the **Bode-plot** to determine the efficacy of pitching motion on production of aerodynamic forces and moments.

CFD Engineer,

FlowXplore, Coimbatore, Tamilnadu, India

May. 2016 – Nov. 2017

- **RANS Simulation of Horizontal & Vertical axis wind turbines** by MRF technique.
- **CHT analysis on IC Engine exhaust manifold.**

TECHNICAL SKILLS

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|---------------|----------------------------|-----------|
| ○ PyTorch | ○ MATLAB | ○ CATIA |
| ○ CUPY | ○ NI LabView | ○ ANSA |
| ○ MPI Fortran | ○ Fluent - Solving/Meshing | ○ Tecplot |

JOURNAL PUBLICATION

- **ADAM-SINDy: An Efficient Optimization Framework for Parameterized Nonlinear Dynamical System Identification**, Siva Viknesh, Younes Tatari, Amirhossein Arzani, *Journal of Computational Physics*, Submitted, 2024.
- **Role of flow topology in wind-driven wildfire propagation**, Siva Viknesh, Ali Tohidi, Fatemeh Afghah, Rob Stoll, Amirhossein Arzani, *Journal of Fluid Mechanics*, Submitted, 2024.
- **Active control of separated flow on a symmetric airfoil by pitching oscillation**, Siva Viknesh S. and Kamal Poddar, *Physics of Fluids*, August 2021.
- **Grid sensitivity and role of error in computing a lid-driven cavity problem**, V. K. Suman, Siva Viknesh S., Mohit K. Tekriwal, Swagata Bhaumik, and Tapan K. Sengupta, *Phys. Rev. E*, Jan 2019.

ACTIVITIES & ACHIEVEMENTS

- **President & Admin** of Tamil Club at IIT Kanpur (Jan 2019 - Sep 2021).
- Received a **Full scholarship** for pursuing the M.S. program at IIT Kanpur.
- Secured All India Rank **141** in GATE AE 2017.
- Secured **Undergraduate Anna University Rank 38** across Tamilnadu.
- **Inter-department Chess champion** at Park College of Technology in 2013.