Sayali Ravindra Kedari

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445 Rhodes Hall, University of Cincinnati, 2600 Clifton Avenue, Cincinnati, Ohio 45221

Skills

- **Programming**: Python (numpy, pandas, scipy, sympy, scikit-learn, tkinter, Pyro), C++, Julia, C, MATLAB
- **FEA**: Abaqus
- **CAD**: CATIA V5, PTC Creo, Autodesk AutoCAD, SOLIDWORKS
- **OS**: Linux, Windows
- **Technologies**: Git

Experience

Graduate Researcher, Vemaganti Research Group, University of Cincinnati *2017 – present*

- Developing hierarchical Bayesian approaches for modeling and predicting the thermal and viscoelastic behavior of polymers.
- Developed optimal design of experiments based on information theory for soft biological materials and polymers.
- Employed Bayesian framework using Python, PyTorch, and message passing interface (MPI) for calibration and validation of viscoelastic and hyperelastic material models.
- Simulated the material response based on hyperelastic models for solids under different loads using Python, MATLAB.
- Implemented the parallel finite difference method to solve the Poisson problem using C++, MPI.

Graduate Research Assistant, UC Simulation Center/Procter & Gamble *Aug 2018 – present*

- Collaborating with cross-functional design teams to resolve complex flow, thermal and mechanical challenges faced at P&G for optimizing and improving production turnovers for baby care products.
- Employed physics-based predictive-design for feminine care products to drive and outline process design and optimization guidelines using Python, Abaqus, Siemens Teamcenter, Solid Edge, MATLAB, and Fortran.

Instructor and Graduate Teaching Assistant, University of Cincinnati *Aug 2016 – Aug 2018*

- Instructed large enrollment (60 students) lab sessions of Applied Computational Methods.
- Assisted in teaching the courses of Applied Computational Methods, Solid Mechanics, Finite Element Method (FEM).
- Supervised students for the class projects based on Ansys, Abaqus and MATLAB.

Graduate Teaching Assistant, University of Kansas *Sept 2014 – May 2016*

- Instructed large enrollment (70 students) lab sessions of Physics and Digital Computational Methods.
- Tutored the students with learning differences for courses of Physics and Intermediate Mathematics.

Engineering Intern, Hindustan Aeronautics Limited, Bangalore, India *Dec 2013*

- Performed simulation of the wing tank refueling system and optimized the pressurization and transfer system of military aircraft, using CATIA V5, STAR-CCM+ and FloMASTER.

Education

University of Cincinnati (UC), Cincinnati, Ohio, US
Doctor of Philosophy (PhD) candidate in Mechanical Engineering, GPA 3.76/4.0 *Expected Mar 2022*
Advisor : Prof. Kumar Vemaganti, PhD
Research focus : Computational mechanics, numerical analysis, uncertainty quantification, machine learning

University of Kansas (KU), Lawrence, Kansas, US
Master of Science in Mechanical Engineering, GPA 3.84/4.0 *2016*
Thesis : Investigation of constitutive theories for heat conduction in solids and for deviatoric stress tensor in incompressible fluids

University of Pune, Pune, India
Bachelor of Engineering in Mechanical Engineering, first class with distinction *2014*
Senior design project : Computational Fluid Dynamics (CFD) analysis of filter assembly

Honors & Achievements

- **International HPC Summer School Training**, SciNet HPC Consortium, 2021
- **Abaqus/Explicit - Advanced Topics Training**, Dassault Systèmes, 2019
- **CEAS Modeling & Simulation Fellowship**, UC Simulation Center/Procter & Gamble, 2018 – present
- **NSF Cyber Carpentry: Data Life-Cycle Training**, University of North Carolina at Chapel Hill, 2018
- **University Graduate Scholarship**, University of Cincinnati, 2016 – present
- **University Graduate Scholarship**, Government of Maharashtra, India, 2014 – 2015