Sayali Ravindra Kedari

Website | LinkedIn | GitHub | Publications

Skills

- **Programming**: Python (numpy, pandas, scipy, sympy, scikit-learn, tkinter, Pyro), C++, Julia, C, MATLAB
- **FEA**: Abaqus, 3DExperience physics apps
- **CAD**: CATIA V5, SOLIDWORKS, PTC Creo
- **OS**: Linux, Windows
- **Technologies**: Git

Experience

Dassault Systemes - SIMULIA, Industry Process Consultant *Apr 2022 – present*

- Deliver high-quality simulation services value to the customers through sharing of knowledge and know-how to grow 3DS software usage.

University of Cincinnati - Graduate Research Assistant *Aug 2016 – Mar 2022*

- Modeling and predicting the thermal and viscoelastic behavior of polymers using probabilistic machine learning approaches.
- Developed optimal design of stress relaxation experiments to maximize information gained about the viscoelastic model parameters.
- Employed Bayesian framework using Python, and message passing interface (MPI) for calibration and validation of material models for soft biological tissues and polymers in applications such as crash-induced traumatic brain injury and soft robotics.
- Simulated the nonlinear material response based on hyperelastic models for solids under different loads using Python, MATLAB.
- Implemented the parallel finite difference method with domain decomposition to solve the partial differential equations using C++, MPI.

University of Cincinnati - Simulation Center, Graduate Research Assistant *Aug 2018 – Mar 2022*

- Collaborating with interdisciplinary teams to drive and outline process design and optimization guidelines for P&G products.
- Performed finite element analysis (FEA) for optimizing and improving production turnovers of baby care products using Abaqus, Siemens Teamcenter, Solid Edge, Python, and Fortran.
- Employed physics-based predictive design and developed a digital twin to resolve complex flow, thermal and mechanical challenges faced for feminine and baby care products using Python and MATLAB.

University of Cincinnati - CEAS, Graduate Teaching Assistant *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.

University of Kansas - Computational Mechanics Laboratory, Graduate Research Assistant *Aug 2014 – Aug 2016*

- Implemented the FE simulation of elastic solids and viscous fluids based on the constitutive theories of heat vector and stress tensor using Fortran.
- Validated the constitutive theories using the model problems: 1D transient heat conduction in a rod, square lid-driven cavity.

University of Kansas - Graduate Teaching Assistant *Oct 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.

Education

University of Cincinnati (UC), Cincinnati, Ohio, US

Doctor of Philosophy (PhD) in Mechanical Engineering, GPA 3.76/4.0 *2022*
Advisor : Prof. Kumar Vemaganti, PhD
Dissertation : Bayesian learning in computational rheology - applications to soft tissues and polymers

University of Kansas (KU), Lawrence, Kansas, US

Master of Science (MS) in Mechanical Engineering, GPA 3.84/4.0 *2016*
Thesis : Finite element analysis for heat conduction in solids and for deviatoric stress tensor in incompressible fluids

University of Pune, Pune, India

Bachelor of Engineering (BE) in Mechanical Engineering, first class with distinction *2014*

Conferences & Workshops

- **16th U.S. National Congress on Computational Mechanics (USNCCM)**, 2021
- **International HPC Summer School (IHPCSS)**, XSEDE, PRACE, R-CCS, and SciNet HPC Consortium, 2021
- **Abaqus/Explicit - Advanced Topics**, Dassault Systèmes, 2019
- **NSF Cyber Carpentry: Data Life-Cycle Training**, University of North Carolina at Chapel Hill, 2018

Awards

- **Procter & Gamble Technology Award**, UC - Simulation Center, 2022
- **CEAS Modeling & Simulation Fellowship**, UC Simulation Center, 2018 – 2022
- **University Graduate Scholarship**, University of Cincinnati, 2016 – 2022