Sayali Ravindra Kedari

Mason, Ohio, USA

kedarisa@mail.uc.edu, sayalik009@gmail.com | GitHub | LinkedIn

Experience

Dassault Systèmes Americas Corporation (previously Dassault Systèmes SIMULIA Corporation) *Apr. 4, 2022 - present*

5181 Natorp Blvd., Suite 205, Mason, OH 45040

SIMULIA Services Industry Process Consultant

- Delivering high-quality SIMULIA mechanics and multiphysics projects to industry customers by sharing knowledge and know-how to grow the SIMULIA finite element analysis (FEA) software and the 3DEXPERIENCE Platform usage.
- Contributing to opportunities for growing business and performing simulation consulting services in simulation-driven design exploration and automation for customers using Abaqus, C++, CATIA, SOLIDWORKS, Isight, Python, VBScript, and 3DExperience platform suite.
- Implemented a physics-based data science approach to extract critical data from large-scale structural and thermal simulations using C++, Abaqus, Python, efficiently extract physical output variables and accelerate the business decision-making process for the customers.
- Developed a physics-based simulation methodology to resolve complex flow, thermal, and mechanical challenges, and delivered FE simulation project using CATIA, Abaqus, Python, and 3DExperience platform suite to the customer.
- Delivered live training sessions of SIMULIA Abaqus and 3DExperience platform suite based on demonstrations to various customers.

University of Cincinnati - Procter & Gamble (P&G) Digital Accelerator (previously Simulation Center) *Aug. 26, 2018 - Mar. 21, 2022*

598 Rhodes Hall, Cincinnati, Ohio 45221

Research Assistant

- Provided technical support to P&G to drive and outline process design and optimization guidelines for P&G consumer goods.
- Performed explicit 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 methodology and developed a digital twin to resolve complex flow, thermal and mechanical challenges faced for feminine and baby care consumer goods using Python and MATLAB.

University of Cincinnati - Department of Mechanical and Materials Engineering *Aug. 28, 2016 - Aug. 25, 2018*

598 Rhodes Hall, Cincinnati, Ohio 45221

Graduate Teaching Assistant

- Instructed large enrollment (60 students) lab sessions of applied computational methods.
- Assisted in teaching the courses of applied computational methods, solid mechanics, and finite element method (FEM).
- Supervised students for the class projects based on Ansys, Abaqus, and MATLAB.
- Graded assignments and exams for the students enrolled in the course.

University of Kansas - Department of Mechanical Engineering and Physics & Astronomy *Oct. 5, 2014 - May 15, 2016*

Strong Hall, 1450 Jayhawk Blvd. Rm 126, Lawrence, KS 66045

Graduate Teaching Assistant

- Instructed large enrollment (70 students) lab sessions of physics and digital computational methods.
- Tutored students with learning differences for physics and intermediate mathematics courses.
- Graded assignments and exams for the students taking the course.

Education

University of Cincinnati (UC) *Cincinnati, Ohio, USA*

Doctor of Philosophy (PhD) in Mechanical Engineering *Aug. 2016 - Mar. 2022*

- Dissertation - Bayesian learning in computational rheology: applications to soft tissues and polymers [link];
  Advisor: Prof. Kumar Vemaganti
- Research was focused on computational structural and solid mechanics, machine learning, artificial intelligence and numerical analysis.

University of Kansas (KU) *Lawrence, Kansas, USA*

Master of Science (MS) in Mechanical Engineering *Aug. 2014 - Sept. 2016*

- Thesis - Investigation of more complete constitutive theories for heat conduction in solids and for deviatoric stress tensor in incompressible fluids [link]
- Research was focused on computational fluid mechanics and finite element analysis.

Maharashtra Institute of Technology *Pune, Maharashtra, India*

Bachelor of Engineering (BE) in Mechanical Engineering *Aug. 2010 - May 2014*

- Senior design project: Computational fluid dynamics (CFD) analysis of filter assembly.

Skills

Programming Python (numpy, pandas, scipy, sympy, scikit-learn, tkinter, Pyro), C++, Julia, C, MATLAB, Git

Simulation Abaqus, 3DExperience platform suite, Isight

CAD CATIA (V5, V6), SOLIDWORKS

Publications and Presentations

Publications

- **Kedari, S. R.**, Atluri, G., Vemaganti, K., *A hierarchical Bayesian approach to regularization with application to the inference of relaxation spectra*, Journal of Rheology, 66(1):125-145, 2022. [link]
- Vemaganti, K., Madireddy, S., **Kedari, S.**, *On the inference of viscoelastic constants from stress relaxation experiments*, Mechanics of Time-Dependent Materials, 24(1): 1-24, 2019, 2020. [link]
- Surana, K. S., Joy, A. D., **Kedari, S. R.**, Nunez, D., Reddy, J. N., Dalkilic, A. S., *A nonlinear constitutive theory for heat conduction in Lagrangian description based on integrity*, Journal of Thermal Engineering, Vol. 3, no. 6, Special Issue 6, 1615-1631, 2017.[link]
- Surana, K. S., Joy, A. D., **Kedari, S. R.**, Nunez, D., Reddy, J. N., Wongwises, S., *A nonlinear constitutive theory for deviatoric Cauchy stress tensor for incompressible viscous fluids*, Journal of Thermal Engineering, Vol. 3, no. 3, 1221-1240, 2017.[link]

Presentations

- **Kedari, S. R.**, Atluri, G., Vemaganti, K., *A hierarchical Bayesian approach to regularization with application to the inference of relaxation spectra*, 16th U.S. National Congress on Computational Mechanics (USNCCM16), July 2021. [link]

Posters

- **Kedari, S. R.**, Atluri, G., Vemaganti, K., *Hierarchical Bayesian inference for inverse problems in rheology*, International HPC Summer School, XSEDE, PRACE, R-CCS, and SciNet HPC Consortium, July 2021. [link]

Honors, Awards & Professional Activities

2022 - present **Reviewer** for various journals including **Journal of Rheology**, **Journal of Intelligent Manufacturing** and **American Institute of Chemical Engineers (AIChe) Journal**.

2022 **Procter & Gamble Technology Scholarship**, P&G Digital Accelerator at the UC, USA.

2018 **Media Coverage: "National Science Foundation (NSF) Cyber Carpentry prepares early-career researchers for data-intensive projects" [link1][link2][link3]**, University of North Carolina (UNC) at Chapel Hill, USA, July 16-27, 2018.

2016 - 2022 **College of Engineering and Applied Science (CEAS) Modeling & Simulation Fellowship**, P&G Digital Accelerator at the UC, USA.

2016 - 2022 **University Graduate Scholarship**, University of Cincinnati, USA.

2014 - 2015 **University Graduate Scholarship**, Government of Maharashtra, India.

2015 **Certificate of appreciation** for volunteering at **"YOU at KU" International Student Orientation**, KU, USA.