

# HOSSEIN SHARIFI

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## RELEVANT EXPERIENCE

### Industry Solution Technical - Intern – Dassault Systèmes May 2022 - Present

- Executed hundreds of FEM simulations of mitral valves (Explicit FEM).
- Performed sensitivity analyses.
- Created a surrogate model of the mitral valve using machine learning techniques to estimate the clinical characteristics of virtual patients trained by physics-based FE models.

### Research Assistant – University of Kentucky August 2018 – Present

- Developed a multiscale FE model of left ventricular mechanics using FEniCS solver.

### Research Assistant - University of Kentucky August 2016 – May 2018

- Investigated the load rating of in-service culverts using finite element modeling.

## TECHNICAL SKILLS

**Computational Mechanics:** Finite-element modeling (Explicit and Implicit), Continuum mechanics, Tissue biomechanics, multiscale modeling

**Machine Learning:** Gaussian Process Regression, Classification, Clustering, Deep learning, Neural network

**Software and programming languages:** Abaqus, ANSYS, FEniCS project, Python (e.g. NumPy, SciPy, Pandas, scikit-learn, Keras, TensorFlow, Matplotlib, seaborn), MATLAB, HTML, JavaScript

## SELECTED CERTIFICATES

- [Machine learning with python](#)
- [Introduction to Deep Learning & Neural Networks with Keras](#)
- [Introduction to Computer Vision and Image Processing](#)
- [Introduction to Data Science in Python](#)

## EDUCATION

University of Kentucky Ph.D. in Mechanical Engineering (2018 – present)  
University of Kentucky MS in Civil Engineering (2016 – 2018)

## SELECTED PUBLICATIONS

- Sharifi, H., Mann, C. K., Rockward, A. L., Mehri M., Mojumder J., Lee L, Campbell K. S. & Wenk J. F. *Multiscale simulations of left ventricular growth and remodeling*. Biophys Rev (2021). <https://doi.org/10.1007/s12551-021-00826-5>
- Sharifi, H., Mann, C. K., Wenk J. F., & Campbell K. S. *A multiscale model of the cardiovascular system that regulates arterial pressure via closed loop baroreflex control of chronotropism, cell-level contractility, and vascular tone*. Biomech Model Mechanobiol (2022). <https://doi.org/10.1007/s10237-022-01628-8>