Bahetihazi Maidu

Dept. of Mechanical Engineering, University of Washington, Seattle, WA, USA.

EDUCATION

University of Washington	*Seattle, WA*	PhD, Mechanical Engineering	Exp. 07/2027
University of California San Diego	*La Jolla, CA*	MS, Mechanical Engineering	06/2020
Beijing Institute of Technology	*Beijing, China*	BS, Engineering Mechanics	07/2018

HONORS, AWARDS & FELLOWSHIPS

College of Engineering Dean's Fellowship, University of Washington. 2022-2023

RESEARCH & TEACHING ASSISTANT EXPERIENCES

Research Assistant, del Alamo lab, *Dept. of Mechanical Engineering, University of Washington.* 2023-2024

Teaching Assistant, Introductory/Advanced Fluid Mechanics, Introduction to Mathmetical Physics, Fundamentals of Propulsion, Mechanics of Fluids, *Dept. of Mechanical and Aerospace Engineering, University of California San Diego.* 2019-2022

JOURNAL & CONFERENCE PUBLICATIONS

1. **B. Maidu**, P. Martinez-Legazpi, M. Guerrero-Hurtado, C. M. Nguyen, A. Gonzalo, A. M. Kahn, J. Bermejo, O. Flores, and J. C. del Alamo. Super-resolution Left Ventricular Flow and Pressure Mapping by Navier-Stokes-Informed Neural Networks. *Computers in Biology and Medicine*, 2025;185:109476. https://doi.org/10.1016/j.compbiomed.2024.109476.

2. G. S. Khurana, J. Guo, L. Severance, A. Gonzalo, **B. Maidu**, J. C. del Alamo, and F. Contijoch. SinoFlow: Fluid flow estimation from sinograms using a physics informed neural network. *The 8th International Conference on Image Formation in X-Ray Computed Tomography*, p431-434, Bamberg, Germany, 2024. https://www.ct-meeting.org/data/ProceedingsCTMeeting2024.pdf.

3. J. Guo, G. Khurana, L. Severance, **B. Maidu**, A. Gonzalo, J.C. del Alamo, and F. Contijoch. CT Gantry Rotation Time and Reconstructed Frame Rate Impact the Accuracy of Flow Field Estimation Using a Physics-informed Neural Network. *The 8th International Conference on Image Formation in X-Ray Computed Tomography*, p384-387, Bamberg, Germany, 2024. https://www.ct-meeting.org/data/ProceedingsCTMeeting2024.pdf

4. Y. Chahine, M.J. Magoon, **B. Maidu**, J. C. del Alamo, P. M. Boyle, and N. Akoum. Machine Learning and the Conundrum of Stroke Risk Prediction. *Arrhythmia & Electrophysiology Review.* 2023;12:e07. DOI: https://doi.org/10.15420/aer.2022.34.

OTHER PUBLICATIONS & CONFERENCE CONTRIBUTIONS

1. M. Guerrero-Hurtado, M. García-Villalba, Y. Stoecker, E. Duran, **B. Maidu**, C. Bargellini, A. Gonzalo, P. Martinez-Legazpi, C. Augustin, P. Boyle, N. Akoum, E. McVeigh, J. Bermejo, A.M. Kahn, O. Flores, J.C. del Alamo. Flow and transport phenomena in the left atrium: Assessing the risk of thrombogenesis. *2nd European Fluid Dynamics Conference (EFDC2).* Dublin, Ireland, 2025.

2. **B. Maidu**, A. Gonzalo, C. Bargellini, L. Rossini, D. Vigneault, P. Martinez-Legazpi, J. Bermejo, O. Flores, M. García-Villalba, E. McVeigh, A. Kahn, and J. C. del Alamo. Left atrial appendage (LAA) clotting risk inferrence and flow reconstruction from 4D Contrast-CT imaging by Multi-Physics-Informed Neural Network (PINN). *American Physical Society 77th Annual Meeting of the Division of Fluid Dynamics.* X03.00003. Salt Lake City, Utah, USA, 2024.

3. **B. Maidu**, P. Martinez-Legazpi, M. Guerrero-Hurtado, C. Nguyen, A. Gonzalo, A. Kahn, J. Bermejo, O. Flores, and Juan Carlos del Alamo. Three-dimensional Super-resolution Left Ventricular Vector Flow, Pressure, & Clotting Risk Mapping by Multi-Physics-Informed Neural Network. *American Physical Society 77th Annual Meeting of the Division of Fluid Dynamics*. X03.00004. Salt Lake City, Utah, USA, 2024.

4. M. Guerrero-Hurtado, Y. Stocker, A. Gonzalo, C. Bargellini, **B. Maidu**, E. Duran, P. Martinez-Legazpi, J. Bermejo, A. Kahn, E. McVeigh, M. García-Villalba, N. Akoum, C. Augustin, P. Boyle, J. C. del Alamo, and O. Flores. MULTI-FIDELITY, MULTI-PHYSICS MODELS OF FIBROSIS-INDUCED LEFT ATRIAL THROMBOSIS. *American Physical Society 77th Annual Meeting of the Division of Fluid Dynamics*. R01.00003. Salt Lake City, Utah, USA, 2024.

5. M. Guerrero-Hurtado, Y. Stöcker, A. Gonzalo, C. Bargellini, **B. Maidu**, E. Duran, P. Martinez-Legazpi, J. Bermejo, A. M. Kahn, E. McVeigh, M. García-Villalba, N. Akoum, C. Augustin, P. Boyle, J. C. del Álamo, and O. Flores. Multi-fidelity, multi-physics models of fibrosis-induced left atrial thrombosis. *16th World Congress on Computational Mechanics and 4th Pan American Congress on Computational Mechanics*. 0509:W242210. Vancouver, British Columbia, Canada, 2024.

6. C. Bargellini, **B. Maidu**, M. Guerrero-Hurtado, A. Gonzalo, L. Severance, P. Martinez-Legazpi, J. Bermejo, E. McVeigh, A. Kahn, M. García-Villalba, O. Flores, and J. C. del Alamo. Inferring left atrial thrombin concentration from 4D CT contrast dynamics by physics-informed neural networks & multi-fidelity coagulation cascade modeling. *American Physical Society 76th Annual Meeting of the Division of Fluid Dynamics*. L06.00004. Washington, D.C., USA, 2023.

7. **B. Maidu**, M. Guerrero-Hurtado, C. Nguyen, P. Martinez-Legazpi, A. Kahn, J. Bermejo, O. Flores, and J. C. del Alamo. All-In-One Left Ventricular Vector Flow, Pressure, & Clotting Risk Mapping by Multi-Physics-Informed Neural Network. *American Physical Society 76th Annual Meeting of the Division of Fluid Dynamics*. T01.00001. Washington, D.C., USA, 2023.

8. C. Nguyen, **B. Maidu**, D. Wong, S. Igata, C. C. Paz, P. Martinez-Legazpi, J. Bermejo, A. Kahn, A. DeMaria, and J. C. del Alamo. Bayesian Intraventricular Vector Flow Mapping: Influence of imaging parameters & algorithmic choices on output uncertainty. *American Physical Society 76th Annual Meeting of the Division of Fluid Dynamics*. T01.00003. Washington, D.C., USA, 2023.

9. **B. Maidu**, A. Gonzalo, C. Bargellini, L. Rossini, D. Vigneault, P. Martinez-Legazpi, J. Bermejo, O. Flores, M. Garcia-Villalba, E. McVeigh, A. Kahn, and J. C. del Alamo. Inferring left atrial appendage (LAA) hemodynamics from 4D CT contrast dynamics by physics informed neural networks (PINNs). *American Physical Society 75th Annual Meeting of the Division of Fluid Dynamics*. Z05.00004. Indianapolis, Indiana, USA, 2022.

10. C. M. Nguyen, **B. Maidu**, D. J. Wong, S. Igata, C. Chazo, P. Martinez-Legazpi, J. Bermejo, A. M. Kahn, A. Demaria, and J. C. del Alamo. Intraventricular Vector Flow Mapping With Data Fusion and Uncertainty Quantification. *Fluids Engineering Division Summer Meeting*. FEDSM:87711. Toronto, Ontario, Canada, 2022.

11. A. Gonzalo, **B. Maidu**, C. Augustin, S. Bifulco, M. Guerrero, M. Garcia-Villalba, P. Martinez-Legazpi, O. Flores, J. Bermejo, E. McVeigh, A. Kahn, G. Plank, N. Akoum, P. Boyle, and J. C. del Alamo. From Patient-Specific Medical Images to Atrial Thrombosis Risk: Physics Informed Neural Networks and Multi-Physics Simulations of Electrophysiology, Biomechanics and Hemodynamics. *15th World Congress on Computational Mechanics and 8th Asian Pacific Congress on Computational Mechanics*. MS0416:3311. Yokohama, Japan, 2022.

12. C. M. Nguyen, **B. Maidu**, D. J. Wong, S. Igata, C. Chazo, P. Martinez-Legazpi, J. Bermejo, A. M. Kahn, A. Demaria, and J. C. del Alamo. Intraventricular Vector Flow Mapping With Data Fusion and Uncertainty Quantification. *American Physical Society 74th Annual Meeting of the Division of Fluid Dynamics*. E28.001. Phoenix, Arizona, USA, 2021.

13. **B. Maidu**, A. Gonzalo, C. Bargellini, L. Rossini, D. Vigneault, P. Martinez-Legazpi, J. Bermejo, O. Flores, M. Garcia-Villalba, E. McVeigh, A. Kahn, and J. C. del Alamo. Inferring the left atrial appendage (LAA) hemodynamics from 4D CT contrast dynamics: reduced order models (ROMs) and physics informed neural networks (PINNs). *American Physical Society 74th Annual Meeting of the Division of Fluid Dynamics*. H14.002. Phoenix, Arizona, USA, 2021.