

EDUCATION	Carnegie Mellon University (CMU) <i>Ph.D Mechanical Engineering</i>	Jan 2022 Onwards
	University of Illinois Urbana-Champaign (UIUC) <i>B.S. Engineering Mechanics, Secondary Field: Fluid Mechanics</i> <i>B.S. Mathematics, Concentration: Graduate Preparatory</i> Minor: <i>Computational Science and Engineering</i> Thesis: <i>Direct Numerical Simulation of Flows Over Wavy Walls at $Re_\lambda = 4780$</i>	2015–2019 GPA: 3.66/4.00 (dual degree)
EXPERIENCE	Julia Computing <i>Intern Engineer</i> - Deploying deep learning surrogate models for Partial Differential Equations in JuliaSim - Developing <code>DiffMesh.jl</code> , differentiable geometry representations and meshing algorithms - Developing numerical PDE solvers that utilize differentiable programming for adjoint optimization	April 2021–Present
	CoreCompete <i>Data Science Trainee</i> - Developed logic of conversational AI agent to support collections calls at a financial institution - Analysis and visualization of inventory forecasting models for an apparels company	Jan 2021–May 2021
	Carnegie Mellon University <i>Research Assistant</i> - Wrote <code>SEM.jl</code> , a Spectral Element based differentiable PDE solver for machine learning research	Sep 2020–Jan 2021
	Argonne National Laboratory <i>Research Assistant</i> - Computational Fluid dynamics simulations (LES, RANS) of turbulent airflow in urban landscapes - Mesh generation, setup, and analysis of OpenFOAM, NEK5000 simulations	Mar 2020–Sep 2020
	Argonne National Laboratory <i>Research Assistant</i> - Fluid dynamics simulations (DNS) of airflow over windfarm terrains on supercomputers - Analyzed Reynolds stress budgets in canonical flows for turbulence model development - Developed <code>NekTools</code> , a FORTRAN 77 toolbox for post-processing NEK5000 simulations	May 2018–Jul 2018
	National Center for Supercomputing Applications <i>Intern</i> - Initial data generation of spacetime metric for gravitational wave simulations in Einstein Toolkit - Implemented numerical methods for solving nonlinear elliptic PDEs (preconditioning, relaxation)	Sep 2017–May 2018
	Mechanical Science & Engineering, UIUC <i>Course Assistant</i> - Taught mechanical analysis using free-body-diagrams and control-volumes for <i>Statics</i> course - Created instructional demonstrations for engineering courses serving 2500 students annually	Jan 2016–Dec 2017
RESEARCH	(manuscript in preparation) V. Puri , R. Balakrishnan, A. Obabko, P. Fischer, <i>Turbulent Kinetic Energy Budgets of Flows Over Smooth and Rough Wavy Walls at $Re_\lambda = 4,780$</i> (upcoming talk) V. Puri , R. Balakrishnan, <i>DNS and LES of Flow Over Smooth and Rough Wavy Walls</i> . American Physical Society Division of Fluid Dynamics 2021 (talk) V. Puri , R. Balakrishnan, <i>DNS of Flow Over Smooth and Rough Wavy Walls at $Re_\lambda = 4760$</i> . American Physical Society Division of Fluid Dynamics 2020 (talk) V. Puri , R. Haas, E. Bentivegna, <i>Initial Data Generation Algorithms for ‘Einstein Toolkit’</i> . American Physical Society April Meeting 2018	
ACTIVITIES & AWARDS	UIUC <i>Theoretical and Applied Mechanics Merit Award</i> Society for Engineering Mechanics, UIUC <i>President</i> Society for Engineering Mechanics, UIUC <i>Curriculum Development</i>	2019 Aug 2018–May 2019 Oct 2016–May 2018
SKILLS	Programming Technologies Design	FORTRAN 77/90, C/C++, Python, Julia, MATLAB, UNIX, \LaTeX Google Cloud Platform, REST API, Postman, Gmsh, Tableau, PETSc, FFTW Computer aided design, woodworking, soldering, Adobe Lightroom, photography