

EDUCATION	<b>University of Illinois Urbana-Champaign</b> <i>B.S. Engineering Mechanics</i> , Secondary Field: <i>Fluid Mechanics</i> <i>B.S. Mathematics</i> (dual degree), Concentration: <i>Graduate Preparatory</i> Minor: <i>Computational Science and Engineering</i>	Aug 2015–Dec 2019 GPA: 3.66/4.00
WORK EXPERIENCE	<b>Research Aide, Argonne National Laboratory</b> - Wall-Resolved Large Eddy Simulations for United States Department of Energy project <b>Research Aide, Argonne National Laboratory</b> - Direct Numerical Simulations of turbulent flows near wavy boundaries using supercomputers - Computed Reynolds Stress budgets within FORTRAN 77 spectral element code NEK5000 - Studied turbulence production, dissipation, spatial transport processes for developing wall-models <b>Intern, National Center for Supercomputing Applications</b> - Computed spacetime metric initial data of black hole system for gravitational wave simulations - Solved nonlinear, elliptic PDEs in parallel within C++ cosmological framework <i>Einstein Toolkit</i> - Implemented relaxation methods for solving elliptic PDEs, significantly reducing solution time - Wrote Laplacian preconditioners for elliptic PDEs using discrete transforms and PETSc in C <b>Course Assistant - Introductory Statics, University of Illinois</b> - Conducted 4 weekly discussion sections (32 students each), wrote problem sets, assisted with logistics - Taught mechanical analysis using free-body-diagrams, control-volumes, and numerical tools	Mar–Jun 2020 May–Jul 2018 Sep 2017–May 2018 Jan 2016–Dec 2017
RESEARCH WORK	(thesis) <b>V. Puri</b> , R. Balakrishnan, A. Obabko, P. Fischer, <i>Reynolds Stress Budgets for Turbulent Flows of Smooth and Rough Wavy Walls</i> (talk) <b>V. Puri</b> , R. Haas, E. Bentivegna, <i>Initial Data Generation Algorithms for ‘Einstein Toolkit’</i> . American Physical Society April Meeting, 2018	
ACTIVITIES	<b>President, Society for Engineering Mechanics, UIUC</b> - Led 30-student organisation to complete ‘Chocolate 3D Printer’, and ‘S’mores Machine’ projects - Improved student engagement in Engineering Mechanics program through tutorials, advising, company meetings, workshops, social events, and department research fair - Supported student recruitment to Mechanical Science and Engineering department <b>Curriculum Development, Society for Engineering Mechanics, UIUC</b> - Student advisor to Strategic Instructional Innovations Program group for three TAM courses - Led a student group to design and build instructional demonstrations such as Ackermann steering system, truss models for Theoretical and Applied Mechanics courses serving 2500 students	Aug 2018–May 2019 Oct 2016–May 2018
HONOURS & AWARDS	<b>Theoretical and Applied Mechanics Merit Award</b> Mechanical Science and Engineering department award in honour of a student’s special contributions to Theoretical and Applied Mechanics, and Engineering Mechanics programs	2019
TECHNICAL SKILLS	Programming    FORTRAN 77/90, C, C++, MATLAB, Python, Shell Miscellaneous    L <sup>A</sup> T <sub>E</sub> X Typesetting, Computer Aided Design, woodworking, soldering, photography	
PROJECTS	<a href="https://github.com/vpuri3">https://github.com/vpuri3</a> - /Spec: MATLAB numerical methods repo; spectral/spectral element codes for fluid flow problems - /Notes: Compiled notes on mechanics and mathematical analysis - /NekTools: Turbulence budgets and post-processing routines for fluid dynamics code NEK5000 - /IlliniHyperloop: (Capstone Project) Passive cooling solution absorbing 300 kJ of heat from propulsion system of a Hyperloop pod; fabrication handled by sponsor, Novark Technologies, Inc.	