

Vedant Puri

CONTACT INFORMATION	Email: vpuri3@illinois.edu Phone: +1 347 330 1343	LinkedIn: https://linkedin.com/in/vpuri3 Code: https://github.com/vpuri3
EDUCATION	University of Illinois Urbana-Champaign , Urbana, IL, USA <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	Research Aide, Argonne National Laboratory , Lemont, IL, USA - Conducted Direct Numerical Simulations of separated flows in undulating geometries utilising up to 1024 compute nodes for 200 hours at Argonne supercomputers using spectral element code NEK5000 - Wrote FORTRAN 77 setup to compute of wall stresses, spatial averages, and budget terms for the tensor Reynolds Stress Transport Equation to study mechanisms of turbulent energy production and dissipation Intern, National Center for Supercomputing Applications , Urbana, IL, USA - Computed initial data for spacetime metric of binary 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 Course Assistant, Introductory Statics, University of Illinois , Urbana, IL, USA	May–Jul 2018 Sep 2017–May 2018 Jan 2016–Dec 2017
RESEARCH WORK	(thesis) V. Puri , R. Balakrishnan, A. Obabko, P. Fischer, <i>Reynolds Stress Budgets for Wall-Bounded Flows in Wavy Geometries</i> (talk) V. Puri , R. Haas, E. Bentivegna, <i>Initial Data Generation Algorithms for ‘Einstein Toolkit’</i> . American Physical Society April Meeting, 2018	
COLLEGIATE INVOLVEMENT	President, Society for Engineering Mechanics , UIUC - Led an organisation of 30 students to complete ‘Chocolate 3D Printer’, and ‘S’mores Machine’ projects - Augmented student participation in Engineering Mechanics program through tutorials, advising sessions, company information sessions, workshops, social events, and annual department research fair - Supported student recruitment to Mechanical Science and Engineering department Curriculum Development, Society for Engineering Mechanics , UIUC	Aug 2018–May 2019 Oct 2016–May 2018
HONOURS AND AWARDS	<i>Theoretical and Applied Mechanics Merit Award</i> 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, C, C++, MATLAB, Python, Shell Miscellaneous L ^A T _E X Typesetting, Computer Aided Design, woodworking, soldering, photography	
PROJECTS	https://github.com/vpuri3 - /Spec : MATLAB spectral element codes for fluid flow problems - /Notes : Compiled notes on mechanics and mathematical analysis - /NekTools : Turbulence budgets and post-processing routines for CFD code NEK5000 - /IlliniHyperloop : (Capstone Project) Implemented a passive cooling solution absorbing 300 kJ of heat from propulsion system of a Hyperloop pod; fabrication handled by sponsor, Novark Technologies, Inc.	