

PROFILE SUMMARY	A graduate student with strong research background in computation and applied mathematics complimented with proven/tested software development skills		
EDUCATION	<b>Rensselaer Polytechnic Institute</b> , New York, USA	(Aug '17 – present)	
	PhD in Mechanical Engineering Advisor: <i>Dr. Onkar Sahni</i>	GPA 3.83/4.00	
	<b>Indian Institute of Technology Madras</b> , Chennai, India	(Aug '12 – Jul '17)	
	B,Tech/M.Tech. in Mechanical Engineering (Product Design) Minor: Industrial Engineering	GPA 8.38/10.00 Major GPA 8.61/10.00	
RESEARCH PROJECTS	<ul style="list-style-type: none"><li>● <b>Implicit non-uniform mesh for large- scale scrape-off layer simulations</b> (Jul '19 – Present)<ul style="list-style-type: none"><li>o Guide: <i>Dr. Onkar Sahni, RPI</i></li><li>- Developed PUMI-MBBL, an implicit block-structured mesh library for scrape-off layer simulation</li><li>- Optimized particle locate APIs and achieved close to 100x speedup for a large-scale plasma simulation</li><li>- Implemented higher order b-spline based charge schemes to address noise in non-uniform mesh</li></ul></li><li>● <b>Wavelet methods for engineering PDE systems</b> (Aug '16 – May '17)<ul style="list-style-type: none"><li>o Guide: <i>Dr. Raju Sethuraman, IIT Madras</i></li><li>- Performed extensive research on Wavelet-Galerkin finite-element method for PDEs and developed custom MATLAB codes that evaluates necessary APIs (like wavelet integrals, moment terms and connection coefficients) to implement wavelet-FEM on PDE systems</li><li>- Thrust also placed on investigation of effect of parameters (like genus of wavelet and resolution used) on convergence and stability of the solutions</li></ul></li><li>● <b>Modeling, Simulation and Control of a Robot</b> (Dec '14 – Aug '16)<ul style="list-style-type: none"><li>o Guide: <i>Dr. S. Soundarapandian, IIT Madras</i></li><li>- Reverse engineered a robot, created a 3-D model and developed a path planning algorithm</li><li>- Designed the control software to ensure precise and accurate path adherence</li><li>- Validated the model through co-simulation in the ADAMS environment, with custom MATLAB codes in a SIMULINK module</li></ul></li></ul>		
INDUSTRIAL EXPERIENCE	<ul style="list-style-type: none"><li>● <b>Winter Intern, Forbes Marshall Ltd.</b> (Dec '15 – Jan'16)<ul style="list-style-type: none"><li>- Mathematically modeled the concentration factor of a Fresnal-type Evacuated Tube Collector in terms of input design parameters</li><li>- Estimated the optimal parameter set by running a Monte Carlo simulation</li></ul></li><li>● <b>Summer Intern, GE India Pvt. Ltd, Transportation division</b> (May '15 – Jul'15)<ul style="list-style-type: none"><li>- Conducted detail research on the topic and suggested possible noise mitigation and heat screening methods to be implemented in GE Engines</li><li>- Developed a Requirement Traceability Matrix (RTM) for Lube Oil pump test rig</li></ul></li></ul>		
SKILLS	<ul style="list-style-type: none"><li>● <b>Programming</b> : C/C++, Python, MATLAB</li><li>● <b>High-Perfromance Computing</b> : OpenMP, Pthreads, MPI, CUDA</li><li>● <b>Modelling/Analysis</b> : Solidworks, Paraview, ANSYS</li><li>● <b>Documentation/Desing</b> : <math>\LaTeX</math>, Doxygen , Inkscape</li></ul>		
PUBLICATIONS	<ul style="list-style-type: none"><li>● ADAMS-MATLAB Co-Simulation of A Serial Manipulator, Tejaswin Parthasarathy, Vignesh Srinivasaragavan, Soundarapandian Santhanakrishnan. MATEC Web Conf. 95 08002 (2017)</li></ul>		