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