VIPUL HARSH

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EDUCATION

Masters, Computer Science　　　　　　　　　　　　　August 2015 - May 2017 (Expected)
University of Illinois at Urbana-Champaign (3.81/4)

B.Tech. (Hons.), Computer Science　　　　　　　　　　　　　July 2011 - May 2015
Indian Institute of Technology, Bombay (9.18/10)

PROJECTS (Details: http://vharsh2.web.engr.illinois.edu/#research)

Collective Operations in charm　　　　　　　　　　　　　March 2016 - Present
· Working on improving communication latencies for collective operations (like gather, scatter) in charm.
· Improving multicast functionalities in charm for MPI like sub-communicator sections

Preventing Overfitting in Machine Learning Classifiers　　　　　　　　　　　　　Fall 2015
· Explored the properties of Dropout by modifying the training algorithm and analyzed change in performance
· Also extended Dropout method for neural networks to other learning classifiers like Perceptron and Support Vector Machines

Improving communication latencies in charm++ using onesided operations　　　March 2016 - Present
· Worked on reducing message sending times for charm by having an API that avoids copies for large messages
· Achieved upto 37% improvement for large messages on BG/Q machines

Parallel version of Floyd Washell algorithm for finding all pair shortest paths in a graph Fall 2015
· Analysed and argued the extent of parallelisation possible in the algorithm
· Predicted performance models and isoefficiency functions for different agglomeration schemes and compared them with experiments on a cluster

EXPERIENCE

Graduate Research Assistant, Parallel Programming Lab (PPL) , UIUC.　　　　　　August 2015 - present
Summer Research Intern, Georgia Tech.　　　　　　　　　　　　　May 2014 - July 2014
Research Internship, LaBRI, France　　　　　　　　　　　　　May 2013 - July 2013

ACHIEVMENTS

· All India Rank 49 in IIT-JEE 2011, among $500,000$ candidates
· Represented IIT Bombay at the prestigious ACM ICPC World Finals 2015. Highest ranked team from India
· Rank 1 in 3rd International Mathematics Olympiad, 2009 conducted by Science Olympiad Foundation
· Certified as among Top 1% (300 students) in India, to appear for the following Indian National Olympiads: Maths (INMO) 2011; Astronomy (INAO) 2009, 2011

TECHNICAL SKILLS

Programming	C, C++, Java, Python, MPI, Matlab, Charm++
Scripting	Bash, Slurm, pyplot, HTML
Miscellaneous	LaTeX, Scheme, Prolog