

Ashutosh Pattnaik

CONTACT INFORMATION (Office)	111N IST Building Penn State University University Park, PA, 16802	Cell: (814) 777-7319 Email: ashutosh@cse.psu.edu Homepage: http://ashutoshpattnaik.github.io
RESEARCH INTERESTS	GPU Architectures, CPU-GPU Heterogeneous Architectures, New Memory Technologies	
EDUCATION	The Pennsylvania State University , University Park, PA, USA <i>Ph.D. Candidate</i> in Computer Science and Engineering, <i>Advisors:</i> Dr. Chita R. Das & Dr. Mahmut T. Kandemir Current GPA : 3.76/4.0	Fall 2013 - Present
	National Institute of Technology , Rourkela, India Bachelor of Technology (<i>Hons.</i>) in Electronics and Instrumentation Engineering GPA : 9.24/10	Fall 2009 - Spring 2013
WORK EXPERIENCE	AMD Research , Austin, TX	Co-Op Engineer, Manager: John Keaty Summer 2015
	Penn State , University Park, PA	Graduate Research Assistant Summer 2014-Present
CURRENT RESEARCH	Understanding the research issues and opportunities involved in near-data computing in GPUs and tackling the issues of co-scheduling data and compute in order to minimize the data movement costs in these GPU systems.	
PAPERS UNDER SUBMISSION	<u>Ashutosh Pattnaik</u> , Xulong Tang, Adwait Jog, Onur Kayiran, Asit Mishra, Mahmut Kandemir, Onur Mutlu, Chita Das, <i>Kernel Scheduling Techniques for PIM-Assisted GPU Architectures</i> Adwait Jog, Onur Kayiran, <u>Ashutosh Pattnaik</u> , Mahmut Kandemir, Onur Mutlu, Ravi Iyer, Chita Das, <i>Exploiting Core-Criticality for Enhanced Performance in GPUs</i> Onur Kayiran, Adwait Jog, <u>Ashutosh Pattnaik</u> , Rachata Ausavarungnirun, Xulong Tang, Mahmut Kandemir, Gabriel Loh, Onur Mutlu, Chita Das, <i>Characterization and Identification of Data-path Under-utilization for GPGPU Power Management</i> .	
PUBLICATION	Adwait Jog, Onur Kayiran, Tuba Kesten, <u>Ashutosh Pattnaik</u> , Evgeny Bolotin, Nilardish Chatterjee, Steve Keckler, Mahmut Kandemir, Chita Das, <i>Anatomy of GPU Memory System for Multi-Application Execution</i> , In Proceedings of the 1st International Symposium on Memory Systems (MEMSYS), Washington, D.C., October 2015 <u>Ashutosh Pattnaik</u> , Sharad Agarwal, Subhasis Chand, <i>A New and Efficient Method for Removal of High Density Salt and Pepper Noise Through Cascade Decision based Filtering Algorithm</i> , In Proceedings of the 2 nd International Conference on Communication, Computing & Security (ICCCS), India, 2012	

TALKS AND PRESENTATIONS	A New and Efficient Method for Removal of High Density Salt and Pepper Noise Through Cascade Decision based Filtering Algorithm - ICCCS 2012, India, October 2012	
TEACHING EXPERIENCE	Teaching Assistant , CMPEN 431, Introduction to Computer Architecture Teaching Assistant , CMPEN 270, Digital Design: Theory and Practice	Spring 2014 Fall 2013
SKILLS	C/C++, Perl/Bash Scripting, GPGPU-Sim, FabScalar, MATLAB, CACTI, GDB	
COURSES @ PENN STATE	Topics in Computer Architecture Computer Networks Operating System Design Approximate Computing Compiler Construction	Data Structures & Algorithms Numerical Computations Programming Language Concepts Algorithm Design & Analysis Programming of Many-Core Architectures
COURSE PROJECTS	Evaluating the Energy Cost of Data Movement in GPGPU Applications <ul style="list-style-type: none"> Created micro-benchmarks for evaluating the energy requirements of data movement among the different levels of memory hierarchy in NVIDIA K20m GPU. Implementation and Scalability Study of HPCG on Many-Core Architectures <ul style="list-style-type: none"> Ported and optimized the HPCG v2.4 code for implementation on Intel Xeon Phi coprocessors. AMPEG: Flexible Approximate MPEG decoding for handhelds <ul style="list-style-type: none"> Implemented tuneable parameters for approximation in MPEG decoding for power-constraint handheld devices. 	
UNDERGRADUATE RESEARCH	Undergraduate Thesis, NIT Rourkela, India Fall 2012 – Spring 2013 <i>Robotic Arm Control Through Human Arm Movement using Accelerometers</i> Built a robotic arm to be controlled by using a wearable device Summer Research Intern, IIT Kharagpur, India Summer 2012 <i>Floating-Point and Fixed-Point Implementation of Divide & Conquer SVD Algorithm for Symmetric Tridiagonal Matrices</i> Implemented fast SVD Algorithm to be used in facial recognition algorithms Research Intern, DRDO, India Winter 2011 <i>Radar Wave Propagation Modeling</i> Investigated and modeled the effects of different environmental conditions on Radar waves propagation through them	
PROFESSIONAL SERVICE AND MEMBERSHIPS	<ul style="list-style-type: none"> Student Member of ACM, IEEE, ACM SIGARCH On-Behalf Reviewer (Conferences): ISCA, MICRO, HPCA, IPDPS, ICCAD, PPOPP 	
REFERENCES	References are available on request.	