MICHAEL B. SULLIVAN

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RESEARCH INTERESTS

I am interested in the design of dependable and efficient computer systems. My current research is focused on cross-layer system architecture and it uses hardware improvements, software techniques, and novel hardware/software collaborative mechanisms as appropriate.

PROFESSIONAL EXPERIENCE

NVIDIA Corporation, Santa Clara, CA
Research Scientist, Architecture Research Group (ARG) 2015–

Research Assistant Positions
University of Texas, Austin, TX 2010–2015
Los Alamos National Laboratory (LANL), Los Alamos, NM 2011
George Mason University, Fairfax, VA 2007–2008
Argonne National Laboratory, Argonne, IL 2007
University of California at Irvine, Irvine, CA 2006

EDUCATION

University of Texas, Austin, TX
Ph.D. in Computer Engineering 2015
M.S.E. in Computer Engineering 2011

George Mason University, Fairfax, VA
M.S. in Computer Science 2009
B.S. in Computer Engineering and B.A. in Mathematics, *summa cum laude* 2007

SELECTED PUBLICATIONS

"SwapCodes: Error Codes for Hardware-Software Cooperative GPU Pipeline Error Detection," in the *International Symposium on Microarchitecture (MICRO)*. 2018

"Understanding Error Propagation in Deep Learning Neural Network (DNN) Accelerators and Applications," in the *Conference on High Performance Computing, Networking, Storage and Analysis (SC)*. 2017

"All Inclusive ECC: Thorough End-to-End Protection for Reliable Computer Memory," in the *International Symposium on Computer Architecture (ISCA)*. 2016

"Bamboo ECC: Strong, Safe, and Flexible Codes for Reliable Computer Memory," in the *Symposium on High Performance Computer Architecture (HPCA)*. 2015

"Containment Domains: A Scalable, Efficient, and Flexible Resilience Scheme for Exascale Systems," in the *Conference on High Performance Computing, Networking, Storage and Analysis (SC)*. 2012

SELECTED AWARDS

Cockrell School of Engineering Fellowship 2011–13
National Defense Science & Engineering (NDSEG) Graduate Fellowship 2008–11
Outstanding Achievement Award in Graduate Computer Science 2009
GMU University Scholar 2004–08

HARDWARE

Binary instrumentation and workload characterization; microarchitectural simulation; VHDL/Verilog and the Synopsys tools for RTL design and analysis.

SOFTWARE

C/C++ (CUDA/OpenCL/MPI/OpenMP), Python (numpy/scipy/numba/Pandas), Matlab.