

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 , Austin, TX Senior 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, <i>summa cum laude</i> 2007
SELECTED PUBLICATIONS	“Characterizing and Mitigating Soft Errors in GPU DRAM,” in the <i>International Symposium on Microarchitecture (MICRO)</i> . 2021 “Buddy Compression: Enabling Larger Memory for Deep Learning and HPC Workloads on GPUs,” in the <i>International Symposium on Computer Architecture (ISCA)</i> . 2020 “SwapCodes: Error Codes for Hardware-Software Cooperative GPU Pipeline Error Detection,” in the <i>International Symposium on Microarchitecture (MICRO)</i> . 2018 “Understanding Error Propagation in Deep Learning Neural Network (DNN) Accelerators and Applications,” in the <i>Conference on High Performance Computing, Networking, Storage and Analysis (SC)</i> . 2017 “Bamboo ECC: Strong, Safe, and Flexible Codes for Reliable Computer Memory,” in the <i>Symposium on High Performance Computer Architecture (HPCA)</i> . 2015
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 (Pin/NVBit); microarchitectural simulation; Verilog and the Synopsys tools for RTL design, neutron and proton beam testing for soft error characterization.
SOFTWARE	C/C++ (CUDA/OpenCL/MPI/OpenMP), Python (numpy/scipy/numba/Pandas).