

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 M.S.E. in Computer Engineering | 2015 2011 |
| | George Mason University , Fairfax, VA M.S. in Computer Science B.S. in Computer Engineering and B.A. in Mathematics, <i>summa cum laude</i> | 2009 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 National Defense Science & Engineering (NDSEG) Graduate Fellowship Outstanding Achievement Award in Graduate Computer Science GMU University Scholar | 2011–13 2008–11 2009 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). | |