

Fall 2015 Seminar Series

Presented by the ECE Division

STORAGE RESEARCH TRENDS IN BIG DATA ERA

FRIDAY OCTOBER 23, 2015

3:30 PM – HEC 450

The Internet today has grown to an enormously large scale. Devices large and small are connected globally from anywhere on the earth. Therefore, we can argue that we are in a network centric era. We can certainly also say that we are in a data centric era. In fact we are currently witnessing the emerging of these two into a new era of big data. In this talk, we will examine the challenges and research trends in storage research for this new big data era. Several other major developments like cloud computing, mobile computing, new memory/storage technologies are certainly creating big impact in this new era. We will also present a number of research projects that are currently under investigation in our NSF (National Science Foundation) I/UCRC (Industry/University Collaborative Research Center) on Intelligent Storage. These projects include research on new storage devices like flash memory based solid state drives, shingled magnetic recording drives, and Kinetic drives, new storage hierarchies that consisting of NVRAM and aforementioned storage devices (tiered storage), cloud storage, big data applications, and I/O workload characterization for different computing environments.

DR. DAVID H.C. DU
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Dr. Du is currently the Qwest Chair Professor of Computer Science and Engineering at University of Minnesota, Minneapolis. He has served as a Program Director (IPA) at National Science Foundation (NSF) CISE/CNS Division from March 2006 to September 2008. At NSF, he was responsible for NeTS (networking research cluster) NOSS (Networks of Sensor Systems) Program and worked on Cyber Trust (Internet Security) Program. He is also the Director of a NSF I/UCRC Center on Intelligent Storage (CRIS). CRIS has been sponsored by more than 10 companies including Seagate, NetApp, Symantec, HP, Dell, SGI, LSI, Xyratex, NEC Labs, HGST, Los Alamos National Lab, etc. Dr. Du received a B.S. degree from National Tsing Hua University in 1974, an M.S. and Ph.D. degree from University of Washington (Seattle) in 1980 and 1981 respectively. He joined University of Minnesota as a faculty since 1981. Dr. Du has a wide range of research expertise including multimedia computing, mass storage systems, high-speed networking, sensor networks, cyber security, high-performance file systems and I/O, database design, and CAD for VLSI circuits. He has authored and co-authored over 260 technical papers including 110 referred journal publications in these research areas. He has graduated 54 Ph.D. and more than 100 M.S. students in the last 30 years. Dr. Du is an IEEE Fellow (since 1998) and a Fellow of the Minnesota Supercomputer Institute.

