- **Doe Hyun Yoon**
  - **Title:** Virtualized ECC: Flexible Reliability in Memory Systems
  - **Abstract:** Traditional memory error protection applies error checking and correcting (ECC) codes uniformly across all memory locations, providing a fixed error tolerance level as well as a fixed access granularity. This mechanism, uniform ECC, fails to provide the error tolerance levels that will be required in future computing platforms without a very significant increase in reliability costs. More importantly, error tolerance level, hence the cost of reliability, is determined at design-time based on a "worst case" scenario of error propensity.

    In this talk, I will present "Virtualized ECC", a general scheme for virtualizing memory error correction mechanisms. Virtualized ECC maps redundant information needed to correct errors into the memory namespace itself. This mechanism enables flexible memory systems, as opposed to using the fixed error tolerance level and fixed access granularity of uniform ECC. Further, VECC allows error correction mechanisms to adapt to user and system demands. I will give a set of examples that show how virtualizing redundant information can improve system efficiency and error tolerance levels
  - **Bio:** Doe Hyun Yoon is a 4th year Ph.D student in the department of Electrical and Computer Engineering at the University of Texas at Austin, and his advisor is professor Mattan Erez. His research focuses on a broad range of computer architecture, especially on the reliability issues in cache memories, DRAM, and emerging non-volatile memory. Before coming to UT, he studied at Stanford university and Yonsei university, and he also worked on audio/video codec algorithms and development at LG Electronics for five years.