



UNIVERSITY OF
TORONTO



4th Year Thesis Available: High-Performance Electromagnetic Solver for 3D Integrated Circuits and GPUs

The thesis is part of an ongoing research project aimed at developing an innovative and high-performance electromagnetic solver suitable for the design of upcoming 3D integrated circuits. The project is in collaboration with AMD (Markham campus). AMD recently released “AMD Fiji”, the world’s first commercial GPU featuring 3D integration. Three dimensional integration is a groundbreaking technology where several semiconductor dies can be stacked on top of each other to achieve unprecedented performance, energy efficiency, and miniaturization.

Thesis goal: to develop a parallel version of the new electromagnetic solver, suitable to run on shared memory or distributed memory parallel computers.

Required skills: proficiency in C/C++ programming.

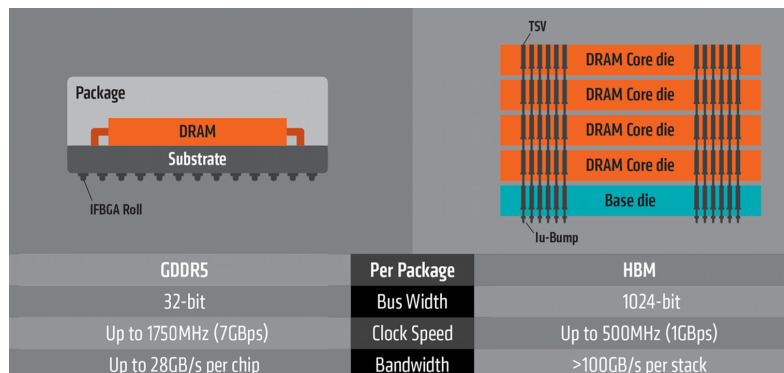
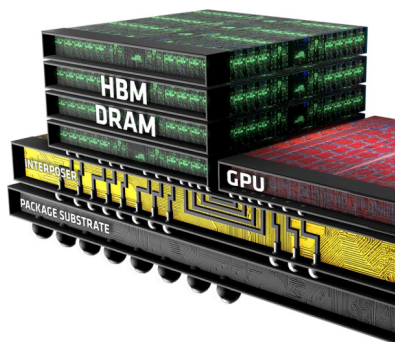
Useful skills: interest in electromagnetism (ECE357), parallel computing (OpenMP, MPI), scientific computing, and mathematics applied to real-file problems.

To apply: email your CV and transcripts to piero.triverio@utoronto.ca

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Left: architecture of the AMD “Fiji” GPU. Right: comparison of the performance of the Fiji’s 3D High Bandwidth Memory (HBM) versus conventional 2D memory (GDDR5). Image credit: amd.com.