

CWSF 2014 - Windsor, Ontario



Alex Tomala

An Innovative Approach to Multi-core Processor Interconnection Networks

Challenge: Information

Category: Senior

Region: Bay Area

City: Hamilton, ON

School: Cardinal Newman Catholic S.S.

Abstract: This project aims to assess the potential of a tree-based interconnection network with a hierarchy-based cache coherence protocol to interconnect a large number of processor cores together, compared to a 2d-mesh interconnection network and cache coherence protocol. The architecture was developed and implemented on the GEM5 simulator and on a Altera FPGA.

Biography

I am a grade 11 student at Cardinal Newman Catholic Secondary School. I am a member of multiple clubs which include the Peer Mentors, Year End Video, and Science Olympics. I represent my school in many different Math, Physics, and Computing competitions, which are fields that I am interested in. I plan to study Math, Physics, and Computers in University and proceed with graduate work after. My passion for Science and Technology was fostered at a young age when I was interested in space. That interest developed into Math, Physics, and Computers. I am inspired by John von Neumann, as he made many contributions in various fields, which is what I want to do.

Awards

Value

Challenge Award - Information - Senior Sponsor: Youth Science Canada	\$1 000
Excellence Award - Senior - Silver Medal Sponsor: Youth Science Canada	\$300
Dalhousie University Faculty of Science Entrance Scholarship Senior Silver Medallist - \$2500 Entrance Scholarship Sponsor: Dalhousie University, Faculty of Science	\$2 500
UBC Science (Vancouver) Entrance Award Senior Silver Medallist - \$2000 Entrance Scholarship Sponsor: The University of British Columbia (Vancouver)	\$2 000
University of Ottawa Entrance Scholarship Senior Silver Medallist - \$2000 Entrance Scholarship Sponsor: University of Ottawa	\$2 000
Western University Scholarship Silver Medallist - \$2000 Entrance Scholarship Sponsor: Western University	\$2 000
University of Windsor Entrance Scholarship Senior Challenge Award Recipient - \$2000 Entrance Scholarship Sponsor: University of Windsor	\$2 000
Total	\$11 800