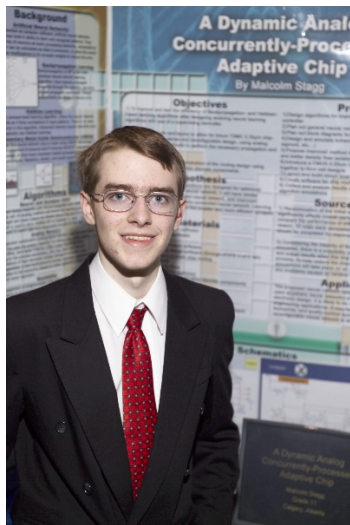


CWSF 2006 - Saguenay, Québec



Malcolm Stagg

A Dynamic Analog Concurrently-Processed Adaptive Chip

Division: Health Sciences

Category: Senior

Region: Calgary Youth

City: Calgary, AB

School: Alberta Distance Learning Center

Abstract: The purpose of this project is to design a neural network chip to improve existing designs, which have poor reconfigurability and learning accuracy. A general-purpose analog design is made for the TSMC 0.35um CMOS process. Enabling multiple learning-algorithms and arbitrary routing, advanced learning-algorithms are implemented. Analog neuron circuit simulations were accurate with 5um matched transistors. Advanced learning algorithms improved density without reducing performance.

Awards	Value
The University of Western Ontario Scholarship Silver Medallist - \$1500 Entrance Scholarship Sponsor: University of Western Ontario	\$1 500
The University of Western Ontario Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: University of Western Ontario	\$1 000
Bronze Medal - Automotive - Senior Sponsor: AUTO21	\$300
Silver Medal - Engineering - Senior Sponsor: Youth Science Foundation Canada	\$700
Total	\$3 500