

# CWSF 2007 - Truro, Nova Scotia



## Michael Smith

### Shortcut Connections in Artificial Neural Networks

**Division:** Earth & Environmental Sciences / None

**Category:** Intermediate

**Region:** Calgary Youth

**City:** Cochrane, AB

**School:** Cochrane High School

**Abstract:** This project was a study of whether short-cut connections improve the efficiency of Neural Networks. These are programs that attempt to learn patterns in data and to generalize from them. The idea of short-cut is relatively unexplored, as it breaks the traditional layered architecture. These shortcut connections proved beneficial, reducing the time spent training and the amount of computations done by the computer.

#### Biography

I was born in Calgary, and raised on an acreage nearby. When I was five, my family moved to Puerto Vallarta, Mexico, where I was schooled almost exclusively in Spanish. After nearly seven years, we returned to Canada. I currently live in Cochrane, Alberta, with both my parents and a younger brother. I am attending grade 10 at Cochrane High School where I am a member of the Sustainable Development Committee and the Debate Club. This year I won my second gold medal out of two years at the Calgary Youth Science Fair, but it is my first visit to the nationals. Also this year I was best in my school for the Cayley math competition. In 2005, I won best in my school for a Scholastic Challenge competition. After High School, I hope to study Engineering, Neuroscience or Physics. My personal interests include math, science, photography, film-making and nearly anything to do with computers.

#### Awards

#### Value

The University of Western Ontario Scholarship Silver Medallist - \$1500 Entrance Scholarship Sponsor: University of Western Ontario	\$1 500
Silver Medal - Computing & Information Technology - Intermediate Sponsor: Intel of Canada, Ltd.	\$700
<b>Total</b>	<b>\$2 200</b>