

## CWSF 2007 - Truro, Nova Scotia



### Casey Banner

#### Neural Networks: Image Recognition

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

**Category:** Senior

**Region:** Pacific Northwest

**City:** Smithers, BC

**School:** Smithers Secondary

**Abstract:** The purpose of the project was to test if artificial neural networks can be used to do reliable image recognition in a computer system. A program was designed to test neural networks in this application, and improved upon using scale invariant feature transforms to increase the accuracy of the system. The current implementation of the neural network is found to be 80 percent accurate.

#### Biography

I am currently completing grade 11 at Smithers Secondary School; Smithers is a small community in central British Columbia. At school, I mostly enjoy physics, aviation, and music courses. I have been involved in jazz and concert bands for three years, playing piano, percussion, and bass, as well as tutoring the junior jazz band. I have maintained an A average throughout my schooling. Outside of school I participate in Biathlon at the local, provincial, and national levels. My other interests include computer programming, robotics, and electronic circuitry. I have held a part time job as a computer technician and network installer for the past four years, and often volunteer my time to help people with their computer problems. This is my fourth trip to the CWSF; I have been fortunate to win bronze, gold, and silver at past competitions.

#### Awards

#### Value

The Manning Innovation Achievement Award Sponsor: Ernest C. Manning Awards Foundation	\$500
The Manning Innovation Achievement Award and \$4000 Manning Young Canadian Innovation Award Sponsor: Ernest C. Manning Awards Foundation	\$4 000
Dalhousie University Faculty of Science Entrance Scholarship Senior Silver Medallist - \$2000 Entrance Scholarship Sponsor: Dalhousie University, Faculty of Science	\$2 000
UBC Science (Vancouver) Entrance Award Senior Silver Medallist - \$2000 Entrance Scholarship Sponsor: The University of British Columbia (Vancouver)	\$2 000
The University of Western Ontario Scholarship Silver Medallist - \$1500 Entrance Scholarship Sponsor: University of Western Ontario	\$1 500
Silver Medal - Computing & Information Technology - Senior Sponsor: Intel of Canada, Ltd.	\$700
<b>Total</b>	<b>\$10 700</b>