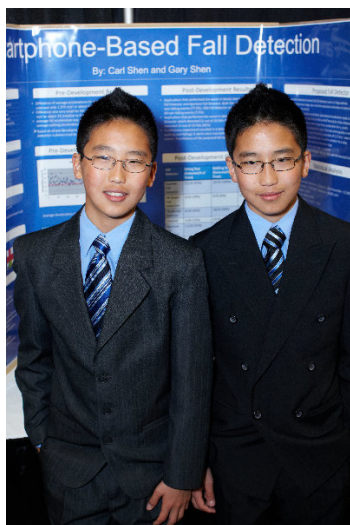# CWSF 2012 - Charlottetown, Prince Edward Island

Carl Shen, Gary Shen

Smartphone-Based Fall Detection

Challenge: Innovation
Category: Intermediate
Region: London District
City: London, ON
School: A.B. Lucas S.S.

Abstract: Falls are a growing concern among seniors. Devices for fall-detection have been insufficient. This project develops a better fall-detection system using smartphones. We researched how to make a fall detector more accurate and reliable. This included tests to determine the parameters for the fall detector and to compare the proposed fall detector with existing fall detectors. Our proposed fall detector is very accurate and reliable.

Biographies
Carl - Carl Shen, 14, was born in Calgary. He has been involved in many sports and has been playing competitive hockey for 8 years. His hockey team, the North London Nationals has gone undefeated in previous seasons and has won one Alliance Championship. He has been assistant captain of his team for the past three years. He has been competing at the London District Science and Technology Fair for 5 years. He has participated in the PIR Essay Contest for 3 years, placing third once. Carl has played piano for over 5 years and is currently studying for Grade 7 Repertoire and Grade 1 Theory. Carl has also been playing the clarinet for his school band fo...
Gary - Gary Shen, 14, born in Calgary, Alberta. He moved to London, Ontario with his family at age one. He has been involved in the London District Science and Technology Fair for five years. This is his second time attending the Canada Wide Science Fair. He is involved in many sports. He plays competitive hockey and has been team captain for several seasons. For his project he partnered with his twin brother Carl and his inspiration was his Grandma who would always go on walks but was afraid she would slip and hurt herself. After conducting his project he will further develop his application and release it on the Google Play Market.

Awards	Value
Excellence Award - Intermediate - Bronze Medal Sponsor: Nuclear Waste Management Organization	$300
Western University Scholarship Bronze Medallist - $1000 Entrance Scholarship Sponsor: Western University	$1 000
Total	$1 300