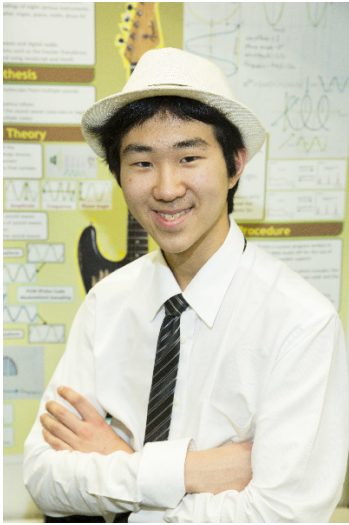


## CWSF 2014 - Windsor, Ontario



### Fred Chun

#### Why My F# Sounds Different From Yours: The Fingerprints of Musical Instruments

**Challenge:** Innovation

**Category:** Junior

**Region:** Prince Edward Island

**City:** Stratford, PE

**School:** Stonepark Intermediate School

**Abstract:** This project was about analysing the differences between diverse sounds utilizing sampled recordings of eight different instruments and building my own spectrogram. The analyses included various ranges of harmonics, overtones and waveform envelopes. This research will lead to a software development of sound source separation. The software could potentially be implemented in many different fields of acoustics and engineering, profitable and beneficial to developers.

#### Biography

Hi, my name is Fred Chun and I'm 13 years old. My hobbies are playing badminton and playing music. I am highly skilled in Math and Science and I scored 142/150 on the Gauss Math Contest in 2013. I plan to have a career in art and engineering. I got the idea/inspiration for my project after my friend moved to Yukon last summer. Him and I used to play music together, and he was the drummer. So I decided to practice playing guitar with only digital recordings of the drum tracks of songs. After I did some research on the internet, I found out that there isn't any software that can separate sound sources. So I decided to make my own software that will do exactly that. Except I had to learn the basics of sound and why different sounds sound, well different. I am still researching on the subject and I plan to release the software sometime in the near future, for the next CWSF! My advice to other students who are thinking about doing about doing a project is that do as much as you can to improve it every day and realize the potential of your project!

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