

Ziyue Yang
Student Number. 1004804759
ziyue.yang@mail.utoronto.ca

Jun 11, 2020

Dear Professor Tyrrel:

I am submitting my candidature for the Research Opportunity Program 1381. My passion is to work with the amazing faculty and collaborate to discover results that would make an immediate impact. I enjoy manipulating data and analyzing them for any immediate problems or projects I want to pursue. I have completed 'CS229 - Machine Learning', and I am making progress in 'CS231n - Convolutional Neural Networks for Visual Recognition'. Both of these courses are offered by Stanford University with publicly distributed materials online.

Recently, I have been working on building Deep Neural Network-based models for tumor segmentation.

Most of my projects always come from a problem I want to solve. The major reason I chose the topic of segmenting tumors has a story behind: My grandfather Sheng was diagnosed with neck cancer last year. After months of radiation therapy in China, alongside with Sheng's suffering, as everyone thinks the cancer is gone, there still exists a hidden tumor, which was not discovered until two months ago, due to the lack of in-depth analysis. Fortunately, the tumor was removed successfully.

A problem is discovered in this story: Due to the labour-intensive nature of the manual segmentation process and mistakes, or disagreement between manual segmentations, there exists a need for an efficient and robust automated segmentation algorithm. I expect to fully develop models around this topic by the beginning of September, to validate the knowledge I gained from CS231n listed above.

I am particularly interested in doing formal academic research, and yet the course restrictions do not allow me to take machine learning related courses until next semester; hence I have decided to get my hands dirty by seeking materials online. Handling data using modern machine learning methods is something I am passionate about, which reflects my decision for applying to this program.

I truly hope to make a solid contribution to the Research Opportunity Program and gain valuable research experience in my undergraduate years.

Sincerely,

Ziyue Yang