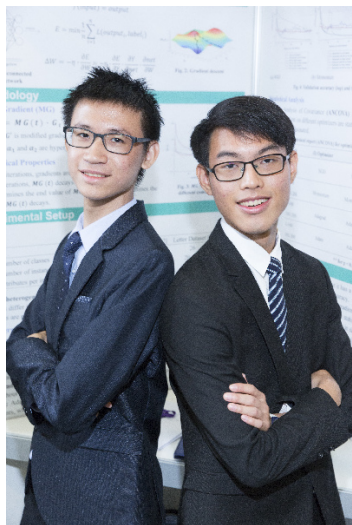


CWSF 2018 - Ottawa, Ontario



Yan-Chen Yeh, Tung-Yu Wu

Neural Network Optimization Using Modified Gradient

Challenge: International

Category: Senior

Region: Taiwan, R.O.C.

City: Sanxia District, New Taipei City, , New Taipei City,

School:

Abstract: Since training a neural network model is time-consuming, this research aims to shorten its training process. In doing so, a function that modifies gradients is proposed. This function decays throughout training, which ensures that optimization is accelerated and training is stable. In the experiments, the modified gradient is applied to four different optimizers, and it outperforms its unchanged counterpart in terms of accuracy.

Biographies

Yan-Chen - My name is Yan-Chen Yeh and I come from Taiwan. I am now a sophomore at Jianguo High School, a place where I can fully nurture my talents in science as well as develop my interest in sports. At the age of twelve, I set off on a journey to explore computer science; last year, my friend Tung-Yu and I commenced working on this project, which originally stemmed from his lucid dream. We were inspired by the spike-and-wave pattern during sleep and developed a new coefficient to adaptively magnify loss function in neural network. I feel privileged to partake in the 2018 CWSF and I look forward to meeting brilliant minds in Canada! As for my dream an...

Tung-Yu - My name is Tony Wu. I'm 17 years old. I come from Taiwan, which is also called Formosa. I'm interested in the domain of Information Engineering. After getting into senior high school, I joined the information club and started to learn the knowledge of Machine Learning; I think it is very cool and has unlimited potential in the future. I also participate in Taiwan International Science Fair in February and be selected as one of the representatives of Canada-Wide Science Fair. It is undoubtedly a fantastic experience. I find neural networks complicated but beautiful; hoping to decrease the computational resources they cost and to get them m...

Awards

Value

Gold Medal - International	
Sponsor: Youth Science Canada	
Total	\$0