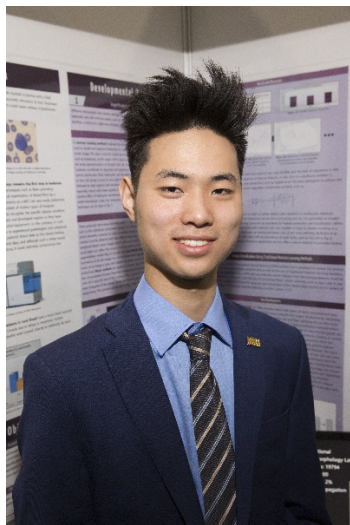


CWSF 2019 - Fredericton, New Brunswick



Peter Zhu

Development of an AI-Based Acute Promyelocytic Leukemia Classification System

Challenge: Innovation

Category: Senior

Region: South-East New Brunswick

City: Moncton, NB

School: Harrison Trimble High School

Abstract: Acute promyelocytic leukemia (APL) is an extremely malignant form of acute leukemia and must be treated as soon as possible; however, due to a lack of personnel and equipment, APL is often misdiagnosed in rural regions and developing countries. To solve this problem, I developed an AI-based classification system that determines, from conventional microscopic images of leukocytes, whether or not APL is present.

Biography

Peter Zhu is a grade 11 student at Harrison Trimble High School in Moncton, New Brunswick. Peter was first exposed to working with artificial intelligence in his previous CWSF project; as an avid programmer and innovator, Peter was quickly drawn into the idea of using artificial intelligence to solve current medical needs. Besides from doing research and innovation, Peter has won mathematics awards in contests hosted by Brock University, the University of Waterloo and the University of New Brunswick. In his spare time, Peter enjoys public speaking and has placed first provincially for at English and French oratory competitions. Peter is the founder of his school's Math Club and plays for his school's badminton team and concert band. His advice for aspiring science fair students is to play to their strengths, pick a field they are interested in and passionate about, and plan out everything in advance.

Awards

Value

| Awards | Value |
|--|-----------------|
| Excellence Award - Senior - Gold Medal Sponsor: Youth Science Canada | |
| Dalhousie University Faculty of Science Entrance Scholarship Senior Gold Medallist - \$5000 Entrance Scholarship Sponsor: Dalhousie University, Faculty of Science | \$5 000 |
| UBC Science (Vancouver) Entrance Award Senior Gold Medallist - \$4000 Entrance Scholarship Sponsor: The University of British Columbia (Vancouver) | \$4 000 |
| University of Manitoba Entrance Scholarship Senior Gold Medallist - \$5000 Entrance Scholarship Sponsor: University of Manitoba | \$5 000 |
| University of New Brunswick Canada-Wide Science Fair Scholarship Gold Medallist - \$5000 Entrance Scholarship Sponsor: University of New Brunswick | \$5 000 |
| University of Ottawa Entrance Scholarship Senior Gold Medallist - \$4,000 Entrance Scholarship Sponsor: University of Ottawa | \$4 000 |
| Western University Scholarship Gold Medallist - \$4000 Entrance Scholarship Sponsor: Western University | \$4 000 |
| Youth Can Innovate Awards - Senior Sponsor: The Gwyn Morgan and Patricia Trottier Foundation | \$1 000 |
| Youth Can Innovate Awards - Senior Sponsor: The Gwyn Morgan and Patricia Trottier Foundation | \$7 000 |
| China Adolescents Science and Technology Innovation Contest (CASTIC) Sponsor: Youth Science Canada | \$2 500 |
| Total | \$37 500 |