

# ALLEN PEI

## HIGH SCHOOL STUDENT

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🌐 PeiAllen

Hi, I'm an avid Competitive Programmer and Mathematician with an interest in spreading to other branches of computer science. I work with passion and I hope to meet many new people and make many new friends.

## Skills

### COMPUTER SCIENCE

C++  
Competitive Programming  
HTML  
JS  
Python  
React  
Graph Theory  
Dynamic Programming  
Heavy Light Decomposition  
Centroid Tree  
Hashing  
Segment Tree  
Treap  
Convex Hull Trick  
Generating Functions  
Divide and Conquer  
Bitmasks  
Binary Indexed Tree

### MATHEMATICS

Modular Arithmetics  
Geometry  
Algebra  
Combinatorics  
Advanced Functions  
Number Theory

## Education

University of Toronto Schools

Sept. 2016 to Current

### UTS Portal App

Nov. 2019 to Current

With friends from Gr 12, I have helped to design an UTS app to help UTS students manage their schedules and receive school publications. We will soon be starting Beta Testing.

### Contests on Dmoj

May 2019 to Current

I have been involved in the creation of 7 competitive programming contests on dmoj.ca each with more than one hundred participants from all the world.

### EarthSense

Dec. 2019 to Dec. 2019

IoT Device Designed at HackTheHammer II, which won second place. It is connected to React frontend for smart environmental data collection. Has SMS alerts and simulation of a heatmap + pathfinding to help users get from one point to another while avoiding pollution.

### Olympiads Computing Competition

Aug. 2019 to Aug. 2019

Helped to create and set problems for an onsite competitive programming competition at Olympiads School, a Saturday school with hundreds of students and International Olympiad Alumni. One hundred plus people wrote the contest and close to a hundred people participated onsite.

## Awards

Hack The Hammer · Hack The Hammer II 2nd Place

Dec. 2019

Hackathon of Hundreds of Highschool students.

Waterloo CEMC · Canadian Computing Olympiad Bronze

May 2019

Canadian Camp of top 25 students in CCC to choose Canadian Team to send to IOI.

Education Computing Organization of Ontario ·  
ECCO Programming Contest 2nd Place

May  
2019

ECCO Programming Contest is an Ontario competitive programming contest hosted in three rounds by ECCO. Top Participants in the first and seconds rounds which are divided into regions move on to the next rounds, and in the final round the top three teams receive awards.

CollegeBoard · Preliminary Scholastic Aptitude Test 10 Score: 1480/1520

Oct. 2019

Preliminary Scholastic Aptitude Test for Grade 10s around the world centered at the United States to use to determine the receivers of the National Merit Scholarship Program. The score is within 99 Percentile of all students and could potentially be enough to qualify the National Merit Scholarship Program if American.

UTS Alumni Association · UTS Alumni Association 50th Anniversary Scholarship

Oct. 2019

The UTS Alumni Association 50th Anniversary Scholarship is given to two recipients per grade and is for character, industry, interest in extra-curricular activities and scholarship.

USA Computing Olympiad · USACO Platinum Honour Roll

Jan. 2020

In the January Round of the 2020 USA Computing Olympiad, I managed to reach the honour roll of the Platinum Division (Highest out of All Divisions). More specifically I managed to get 62nd among all high school participants worldwide out of 503 participants in the Platinum Division, and out of the 6498 total participants in the entire contest.

## Activities

### Competitive Programming

Mar. 2017 to Current

I have been an avid Competitive Programmer achieving Master on both DMOJ(dmoj.ca/user/Dormi) and Codeforces(https://codeforces.com/profile/Dormi). On Codeforces I have participated in 32 contests of 2 hrs each, allowing me to reach the top 1.6% of 75 thousand people in skill rating.

### Math Contests

Summer 2011 to Current

I have been taking Math Contests since Grade 2. I have taken Math Kangaroo, Gauss, Pascal, Fryer, Fermat, CIMC, COMC, and AIME. I have also been involved in team Math Contests from universities in the US. These include HMMT, CMIMC, and ARML. I have achieved honour roll in Fermat, Math Kangaroo, and CIMC.