



Canadian Mathematical Society  
Société mathématique du Canada

**2010 Canadian International  
Mathematical Olympiad Team  
Fact Sheet**







### **ROBIN CHENG – TEAM MEMBER**

Robin Cheng was born in China in 1992. He came to Canada as an immigrant in 2006. He is graduating this year from Pinetree Secondary School in Coquitlam, B.C.

Robin first showed great interest towards the acquisition of knowledge in kindergarten. He persevered in asking his parents to provide him interesting problems that would continually challenge him towards eloquent solutions. In an effort to broaden and further Robin's natural ability towards learning, his mother arranged for him to learn electronic piano, abacus, and calligraphy starting at the age of three. When Robin finally entered the formal education program, he began to show a strong interest in mathematics. Receiving new mathematics books from his parents became a thrilling experience. Simply put, for Robin, mathematics became more and more an enjoyable and passionate pursuit.

Robin finished his elementary school in four years, 2 years ahead of the standard timeline. He was subsequently invited to be part of an Elite Class in Northeast Yucai School. The aim of this program was to prepare selective students to attend university by the time they reached 15 years old. Even in that group of 28 talented individuals, Robin ranked 1<sup>st</sup>, achieving his highest honors in Mathematics and Physics.

Upon arriving in Canada a few years back, Robin entered Pinetree Secondary School in Coquitlam, B.C. His math instructor Mr. George Lin has guided him by helping him better communicate his knowledge of Mathematics in English, selecting various mathematics books to review, and encouraging him to participate in various math contests, activities, and camps held in North America.

Over the years, Robin has demonstrated his mathematical skills through a variety of national and international level mathematics competitions, including the CNML, ASMA, Mandelbrot, Pascal, Cayley, Fermat, Euclid, COMC, AMC, AIME, CMO, APMO, and USAMO. Due to his outstanding achievements on such contests, Robin was subsequently invited to participate in several prestigious events including the 2009 IMO Team to Bremen, Germany, the 2008 Canada/USA Mathcamp, and the UBC Math Circle from 2008 to 2010. Through these activities, Robin has improved in his problem-solving techniques and mathematics communication skills over the past four years.

In addition to his skills in mathematics, Robin is also a self-taught computer programmer. He attended the Canadian Computing Competition in 2008. After two stages of contests, he and three other students were selected to represent Canada in the International Olympiad in Informatics (IOI) in Cairo, Egypt, in which he achieved a Bronze Medal. Last year, he was selected again to be part of the Canadian IOI Team representing Canada on the IOI in Bulgaria. This year, he was honored to be selected once again to participate in the IOI held in University of Waterloo.

**ALEX SONG – TEAM MEMBER**

Alex Song was born in 1997 in Tianjin, China, and immigrated to Canada with his family in 2002. Alex is currently living with his parents in Waterloo, Ontario and has just completed 7th grade in Detroit Country Day School.

Alex showed extraordinary interest in numbers and patterns at an early age. He took his first math contest in Grade 1: the Pythagoras Contest, a national contest for 6th graders. Since then, Alex started to explore the amazing world of math competitions and develop his mathematical problem solving skills.

Alex started to compete in high school mathematical contests in Grade 3. His dedication and strength in problem solving has aided his excellence in Canadian and US math contests in the past few years. Recently, Alex won 1st place on the CMO (Canadian Mathematical Olympiad) and an honorable mention on the APMO (Asian-Pacific Math Olympiad) in 2010. Before that, Alex was the 1st place individual winner of ARML (American Regional Mathematics League) and the winner of the Euclid contest in 2009.

Alex learned math from a variety of resources. He had an individual education program with Mr. Jack Bristow, his first math teacher in Sandowne Public School. He took an accelerated math class at Waterloo Collegiate Institute and finished AP Calculus during Grade 6. Alex was a long time veteran of the University of Waterloo Math Circles, having participated since Grade 2. Most recently, his participation in the Canadian Winter Camp brought him fully to the Olympiad level. Also, Alex was benefited by the mentoring on mathematics and many related topics from Dr. Edward Wang.

Besides math, Alex likes to enjoy himself by playing piano and table tennis. He found a perfect match for his math capabilities in playing chess and bridge. He also likes to travel to different places of the world.



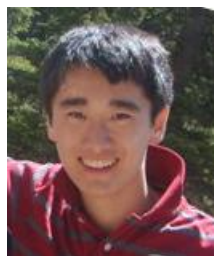
### HUNTER SPINK – TEAM MEMBER

Hunter Spink was born in Vancouver, British Columbia, and currently resides in Calgary, Alberta. He is currently completing grade 11 at Western Canada High School in Calgary.

Throughout the earlier grades, Hunter always showed a keen interest in problem solving, and frequently excelled in competitions, especially chess, where he frequently ranked near the top in his grade for Canada. Hunter felt his calling was in mathematics when in grade 6, he solved the problem of which numbers could be written as the sum of consecutive integers by constructing a table, and finding a winding pattern through the table which he proved would enumerate all numbers which were not powers of 2. Shortly after, in grade 8, he devised a method for computing base 2 logarithms by hand.

After many years in the Math Circles program at the University of Calgary, Hunter came to know Richard K. Guy, whom Hunter says has been an ongoing inspiration to pursue mathematics further, and Adrian Tang, who, set up an advanced math circles program specifically geared at Olympiad-level math. After participating in this program in Grade 9, Hunter received Honorable mention in the Canadian Mathematical Olympiad CMO and second place in the Asian Pacific Mathematical Olympiad APMO, while in Grade 10, which earned him a spot on the 2009 Canadian International Mathematical Olympiad team. He won a silver medal at that year's IMO. This year, Hunter was a United States of America Mathematical Olympiad USAMO winner, and because of this result, was invited on to this year's Canadian IMO team.

Besides mathematics, Hunter likes programming, skiing, and physics. His mathematical interests lie with group theory, analysis, and number theory, and he is currently researching into the solutions of integral quadratic forms.



### CHEN SUN – TEAM MEMBER

Chen Sun was born in Nanchang, China, in 1992. He immigrated to Canada with his family the following year, to London Ontario, where he currently still resides. From an early age, Chen was exposed to mathematics. His parents believed in the importance of mathematics, and strived to show him its concepts.

It was in 4<sup>th</sup> grade that Chen first attended the local “Math Challenge @ Western” Program. There, his excellent math teacher, Tom Griffiths, introduced him to the beauties of the subject. Chen was amazed at the difficulties of many math problems at first glance, yet there were always some weird, simple solutions. He really wanted to one day learn how to approach and solve those problems. He was first introduced to the Canadian Mathematics Competitions by Mr. Griffiths, and wrote the Canadian Open (COMC) for the first time in grade 6.

In grade 7 Chen was the youngest student invited to write the United States of America Mathematical Olympiad. In 2008 he placed first in Canada on the Asian Pacific Mathematical Olympiad (APMO), and also first in Canada in the Canadian Mathematical Olympiad (CMO), earning him a spot on Team Canada to the IMO. At the International Mathematical Olympiad 2008, in Madrid, Spain, he won a bronze medal. In 2009, he placed first in Canada in the APMO, and received an honorable mention in the CMO, and earned a spot on Team Canada to the 2009 IMO. At the International Mathematical Olympiad 2009, in Bremen, Germany, he won a silver medal. He is sad that 2010 will be his final year on Team Canada to the 2010 IMO in Kazakhstan.

Besides mathematics, Chen also enjoys scientific research, music, and volunteering. He especially enjoys participating in Science Fairs, and was part of Team Canada to the International Science and Engineering Fair (ISEF) 2008 in Atlanta, Georgia, where his project on *b. cenocepacia*, a pathogen dangerous to Cystic Fibrosis patients, won him a silver medal, as well as the unique honor of having an Asteroid near Mars, “chensun”, named after him. He has also won numerous science contests, including placing 8<sup>th</sup> in the written portion of the 2009 Canadian Biology Olympiad, and coming 6<sup>th</sup> in Canada in the 2010 Sir Isaac Newton physics contest.

Chen has always enjoyed playing the piano and participating in the Kiwanis Music Festival, where he won several trophies in the senior Concerto and Sonata classes. He was very excited to work with MP Glen Pearson of the Liberal Party, and helped Mr. Pearson canvass door to door persuading people to vote for him. Mr. Pearson was happily elected to Parliament in the 2008 federal election.



### YUQI ZHU – TEAM MEMBER

Yuqi Zhu was born in Shanghai, China in 1992. He immigrated to Canada with his parents in January 2009. He is finishing grade 12 at University Hill Secondary School this year and will attend the University of British Columbia in the fall.

Yuqi's mom began to teach Yuqi mathematics when he was only 3 years old. The most important reason for this was because she could not find anything else that could calm this restless child.

In Grade 4, Yuqi met an excellent Math Olympiad teacher, called Jasheng Wu. Yuqi displayed an incredible talent in mathematics in Wu's class. He often finished first out of thousands of students. Wu also appreciated Yuqi's gift and encouraged Yuqi to keep pursuing mathematics.

In grade 9, Yuqi won second prize in the Shanghai Junior Math contest and first prize in the Shanghai Junior Physics Contest. Because of his excellent performance in the Science Competitions, he was accepted into the science class of Shanghai High School, one of the best high schools in Shanghai.

It is not an exaggeration to say that the experience in the Science class was the best moment in Yuqi's life. Since Shanghai High school was a boarding school, Yuqi could discuss Math or Physics with his roommates until very late every night. Like in oscillation, once the frequencies meet with each other, the amplitude will then reach its maxima. Science class ignited Yuqi's interest in science and strengthened his ambitions.

In the first semester of grade 11, Yuqi got 2nd prize in both the Shanghai Senior Math contest and the Shanghai Senior Physics Contest. In January 2009, Yuqi immigrated to Vancouver, Canada with his parents. On Feb. 10th, which was the first day he entered into his new Canadian high school, he participated in the American Math Contest 12A. He received a score of 139.5 on AMC12A, which was the second highest score in Canada. He received a score of 9 on AIME II and 19 on that year's USAMO. He also received fourth in Canada on the 2009 Euclid Math Contest. In grade 12, he received a score of 77 on the COMC and was invited to write the CMO and APMO.

In 2010, because of his improvement in English, Yuqi did much better in his second-year Canadian Math Competition life. Yuqi received the highest score in Canada on the AMC12A, honorable mention for the CMO, a bronze medal for the APMO, and a score of 24 on the USAMO.

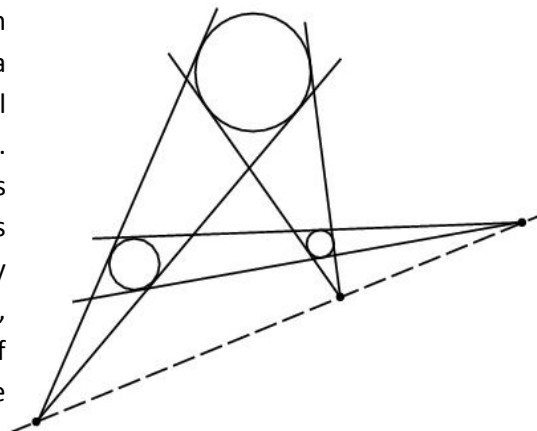
Besides math, physics is also one of his favourite subjects. He received first place in this year's Canadian Association of Physicists secondary prize exam and got invited to the National Physics Olympiad final.

Yuqi likes to listen to music in his spare time. In his opinion, life in China was like playing an online video game, competitive and exciting. Life in Canada was like listening to soft music, free and casual. So listening to soft music on a peaceful afternoon became one of his favourite hobbies in Canada. Yuqi also likes to chat with his friends, read articles on Wikipedia and play sports, especially table tennis, soccer and basketball. Playing the violin is also one of his pastimes. Yuqi started playing violin at four years old and now he is the violinist in the school senior band.

**JONATHAN ZUNG – TEAM MEMBER**

Jonathan was born and grew up in Toronto. When he was young, he had a great dislike for the computational mathematics that he was taught in school.

In seventh grade, however, he was introduced to the wider world of mathematics by his teacher Adam Brown, who showed him numerous pretty results in Euclidean geometry and combinatorics. That year, Adam showed him a beautiful proof of what remains one of Jonathan's favourite theorems: Monge's theorem (see picture).



As he progressed through high school, he recognized how endless arguments could arise over propositions in many fields such as politics or literary analysis. Thus, he began to appreciate a side of mathematics apart from its beauty: the incontrovertible truth of its statements.

Jonathan is also interested in physics. In his spare time, he likes to fold origami, juggle, and go on bike rides. In the coming year, Jonathan will be entering the University of Toronto to study mathematics.





### **ADRIAN TANG – TEAM LEADER**

Adrian is currently a PhD Candidate at the University of Calgary in mathematics, under the supervision of Dr. Renate Scheidler. His primary research is algebraic and computational number theory. He recreationally does research in graph searching, pursuit problems and in mathematical problems related to cryptography and security.

He is a member of the Canadian Mathematical Olympiad committee, the Alberta High School Mathematical Competition committee and the Security Privacy Information Exchange (SPIE). In mathematics competitions, he won a bronze medal at the International Mathematical Olympiad in 1998, was the Deputy Observer for Canada in 2005 and the Deputy Leader for Canada in 2007. He was also the organizer of the Calgary Math Circle, a small knitted group dedicated to training young talented mathematicians to excel in mathematics and mathematics competition. Upon graduation, he will pursue a career in software engineering at Google, where he will pursue his dream to come up with a technological breakthrough that will change the world.

Adrian's other interests include traveling, hiking, games and puzzles of any kind, and fine foods and wines. Adrian's other goals include learning gourmet cooking, mountain climbing, scuba diving and bungee-jumping.

Adrian is a believer in living life to the fullest with no regrets and doing what you enjoy. He is extremely happy to have the opportunity to be the Canadian IMO Team Leader. He is extremely proud of his deputy leader Victoria, deputy observer Alex and his team, Robin, Hunter, Alex, Chen, YuQi, Jonathan, for all of their accomplishments, inside and outside of mathematics. Adrian knows the team will have an absolutely wonderful time in Kazakhstan.

**VICTORIA KRAKOVNA – DEPUTY LEADER**

Viktoria Krakovna was born in Chernivtsi, Ukraine. She has just obtained her B.Sc. in Mathematics and Statistics from the University of Toronto, and is now a Masters student at the Department of Statistics, University of Toronto. She received a silver medal at the 2006 IMO in Slovenia, and was a member of the University of Toronto Putnam team throughout her undergraduate years, helping the team finish in the top 10 in 2006-2009. She was awarded the Elizabeth Lowell Putnam Prize as the highest ranking woman in the 2008 Putnam competition. Viktoria was also a teacher at the Fields Institute Math Circles for high school students in 2008-2009.

Viktoria's hobbies include bicycling around Toronto, singing and listening to folk music from around the world, camping and canoeing.

**ALEXANDER REMOROV – DEPUTY LEADER OBSERVER**

Alexander Remorov was born in Moscow, Russia, in 1990, and immigrated to Canada in 2003. This fall he will be entering his third year of Undergraduate Studies at the University of Toronto in the Mathematical Applications in Economics and Finance program.

Alexander actively participated in Canadian Mathematics Competitions during his high school years. In grade 9 he won the grade 12 Euclid Math Contest and as a result was invited to the Junior National Math Camp, where he found out about the Olympiads and was inspired to seriously study mathematics. In 2007 he achieved Honourable Mention on the Canadian and the USA Mathematical Olympiads which earned him the spot on the Canadian International Mathematics Olympiad team. Alexander received a silver medal at the International Mathematics Olympiad in 2007 and a bronze medal in 2008.

So far Alexander has enjoyed his studies in financial mathematics at the University of Toronto. Alexander has done well in his courses and attributes this success in part to his active participation in Olympiads during his high school years, which have helped him develop strong analytical, time management, and communication skills. This summer Alexander is conducting research in the field of calculus of variations under the supervision of professor Jerrard. He has also gained experience in equity research and portfolio management through his involvement at the Hart House Investment Club at the University of Toronto.

In his spare time Alexander enjoys reading, playing chess, and participating in various sports, especially basketball and soccer. He plans to earn a PhD in financial mathematics and to become a professor or a financial analyst.