

DEPARTMENT OF MATHEMATICS**The 13th Epsilon Fund Award to Top Students**

The Epsilon Fund Award was established in 2006 with donations from faculty and staff of the Department of Mathematics, and from the departmental fund to honor excellent students: undergraduates and postgraduates who excel in mathematical scholarship and research. Eighty-seven students have been awarded since its establishment, and the Department is pleased to announce that this year eleven students receive the award and three students obtain honorable mention. Each of them possesses a very high cumulative grade average, especially in mathematics subjects, and some have received multiple graduate program offers from famous universities.

Eleven Mathematics students receive the Epsilon Fund Award**Three postgraduates:****1. Hao LIU (Year 4; PhD)**

劉 皓

四年級哲學博士(數學)研究生

Hao is now our year-four student pursuing the Ph.D. study and is under the supervision of Professor Shing Yu LEUNG. He is the recipient of the 2017 Din-Yu Hsieh Teaching Award and 2017 Overseas Research Award. He has made several important contributions to the field of applied and computational mathematics. One is a partial differential equation based approach to data analysis. Together with Professor Zhigang YAO and Professor Tony CHAN, they have developed a simple variation method based on the Level Set Method together with a recently developed principal flow algorithm. Professor LEUNG and Hao are also collaborating with Professor Roland GLOWINSKI and Professor Jianliang QIAN to develop a novel method for the numerical solution of the Monge-Ampere equation. The methodology relies on the combination of a time-discretization by operator-splitting with a mixed finite element based space approximation. One of his research papers has been published in the SIAM Journal on Scientific Computing, and several more work is submitted to some top peer review journals. Hao has already been offered a postdoc fellow position in the Georgia Institute of Technology.

**2. Yue JIANG (Year 2; PhD)**

蔣 月

二年級哲學博士(數學)研究生

Yue completed our two-year MPhil program two years ago and continued Ph.D. study in MATH. Professor Kani CHEN is her current research supervisor. Yue has done excellent research in financial mathematics and statistics during her Ph.D. study at HKUST. She has completed three high quality research papers in stock market microstructure. The three papers focus on the econometric analysis of time to execution of limit orders, the optimal liquidation of stocks by limit orders, and the market making of stocks respectively. The papers are not only academically interesting but also practically relevant in the investment banking industry. All papers involved building mathematical models, providing theoretical proof, designing computational algorithms, and carrying out empirical studies on huge volume of real market data. In these papers, Yue demonstrated outstanding research creativity, strong ability of theoretical analysis, excellent skills of analyzing big data sets, and strong computation and programming capability. Yue will join Goldman Sachs as a Quant Volatility Trading Researcher after her graduation.



3. Xing JI (Year 3; PhD)

姬興

三年級哲學博士(數學)研究生

A research student of Professor Kun XU, Xing is now pursuing his third-year Ph.D. study. His research focuses on the construction of efficient, accurate, and higher order gas-kinetic scheme (GKS) for solving the Euler and Navier-Stokes equations. He first constructed a family of high order multi-stage multi-derivative (MSMD) GKS1. By combining the second-order or third-order GKS flux functions with the MSMD technique, a family of high order GKS has been obtained, which include the 5th-order schemes with 2 and 3 middle stages. In comparison with traditional higher order methods, the GKS has advantages in terms of efficiency, accuracy, and robustness. It is a breakthrough in the construction of higher order schemes. The related paper has been published in the Journal of Computational Physics in 2018. He then further developed a fourth-order compact GKS2 for the compressible Euler and Navier-Stokes equations under the two-stage fourth-order time marching framework and Hermite WENO (HWENO) reconstruction. The advantage of the new scheme is its compactness, which has great advantages in the real engineering applications with complex geometry. The compact GKS shows much better robustness and is more efficient than DG method in the hypersonic flow simulation with shocks.



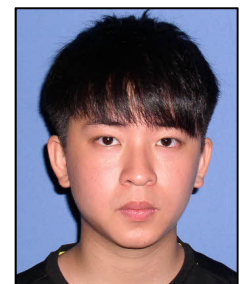
Eight undergraduates:

4. Tsz Kiu Aaron CHOW (Year 4; IRE)

周子翹

四年級理學士(數學) - 國際科研本科生

Aaron is currently our fourth-year undergraduate student in the elite IRE (International Research Enrichment) program majoring in Mathematics (PMA track). He is very outstanding both in academic study and research. Not only has Aaron completed the full series of math honors courses with excellent grades, he also has taken several graduate-level MATH courses with excellent grades including 5111, 6050E, 6050F, 5230, 5251 and 6911C, and two graduate-level PHYS courses. In terms of research, Aaron has already co-authored two important journal papers: one with Professor Shengwang DU's team (PHYS) on quantum optics already published in Nature Communications, another preprint paper with Professor Frederick FONG (MATH) on geometric flows on a reputable pure math journal. Aaron has been elected by the Dean's Fellows in the Columbia University and has been offered a PhD offer in Mathematics from the Columbia University with a fellowship plus a full scholarship. He will continue to work on Differential Geometry to perform his tremendous mathematical ability.

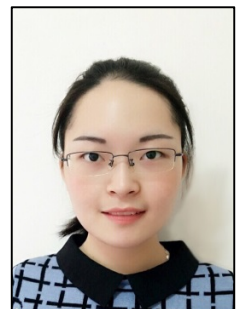


5. Yuan YANG (Year 4; MAEC)

杨苑

四年級理學士(數學與經濟學)本科生

Yuan was the Epsilon Fund awardee last year. She gets the same award this year due to her excellent academic performance. Yuan is now pursuing her final-year undergraduate study in the program of Bachelor of Sciences Degree in Mathematics and Economics. She is also bestowed with the Dean's List Award and the Ho & Ho's Foundation Scholarship. Yuan has joined the exchange program in the National University of Singapore and is awarded the HKUST Alumni Endowment Fund – Exchange Scholarship for Non-local Students. Yuan is going to University of Cambridge and study MPhil in Economics. "Being always curious about knowledge and prepared for challenges" is Yuan's advocate in achieving academic excellence.



6. **Bing An CHANG (Year 3; CS)**

三年級理學士(數學) - 計算機科學本科生

Bing An is our third-year student pursuing the Bachelor of Science (Mathematics) Degree in Computer Science Track, and also taking Computer Science as the second major. He achieves extraordinary academic results and has never missed the Dean's List Award and the Mr. Liu Sing Cheong Scholarship since he entered HKUST. In 2016-2017, Bing An had also received the HKSAR Government Scholarship Fund -Reaching Out Award for joining the MIT-HKUST Summer Research Exchange Program which provided him the opportunity to participate in faculty-mentored research projects. Currently, he is being an exchange student at the University of California, San Diego. Bing An believes that a constant and on-going revision strategy can develop a solid understanding of study materials which builds up the confidence to tackle exams. To equip himself for future careers in this globalized world, Bing An also seeks for an internship opportunity and he has already been offered the internship positions at both Goldman Sachs and Bank of America.



7. **Haoyang FANG (Year 3: PMA)**

方昊扬

三年級理學士(數學) - 純粹數學高級班本科生

Haoyang is in his third year of study pursuing the Bachelor of Science (Mathematics) Degree in Pure Mathematics (Advanced) Track, and also taking Computer Science as the second major. Owing to Haoyang's outstanding academic result, he is presented with the Dean's List Award and the University's Scholarship Scheme for Continuing Undergraduate Students. Demonstrated advanced mathematical ability, he is admitted to The S.S. Chern Class which trains up elite and talented students with honors courses in Mathematics and he is awarded the Chern Class Talent Scholarship on his splendid performance. He also won the Silver medal award in the Chinese Mathematical Olympiad in 2013. At this moment, Haoyang is participating in the exchange program to The École polytechnique fédérale de Lausanne. As he is fond of studying pure mathematics and computer science, Hoayang plans to pursue a master or PhD degree after graduation.

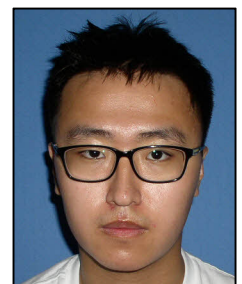


8. **Geyu LIANG (Year 3; IRE)**

梁戈宇

三年級理學士(數學) - 國際科研本科生

Geyu is undoubtedly a distinguished student in the elite IRE (International Research Enrichment) program majoring in Mathematics (PMA track), and also taking Computer Science as the second major. Achieving academic excellence brings Geyu the Dean's List Award and the University's Scholarship Scheme for Continuing Undergraduate Students during his study at HKUST. His performance in The S.S. Chern Class is also remarkable that he is awarded with the Chern Class Talent Scholarship. To develop the global perspectives and enhance an international exposure, Geyu joined the exchange program to The Nanyang Technological University in 2016-17 Summer and presently he is participating in the exchange program in The École polytechnique fédérale de Lausanne. In the coming summer, Geyu has been nominated to join the RECSEM 2018 which offers a chance for undergraduates to gain research experience at The University of Tennessee by focusing on computational sciences and mathematics with use of supercomputers.

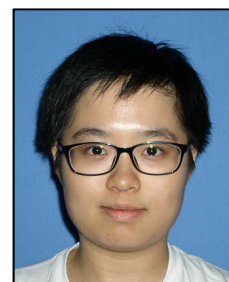


9. **Feiting XU (Year 3; MAEC)**

许斐婷

三年級理學士(數學與經濟學)本科生

Feiting is one of the extraordinary students in the program of Bachelor of Sciences Degree in Mathematics and Economics. Being a student taking Computer Science as a second major, Feiting performs incredibly fabulous in achieving grades A+ in all the computer sciences courses she has taken. Impressed by her academic result, the University has bestowed the Dean's List Award and the University's Scholarship Scheme for Continuing Undergraduate Students on Feiting. Her attitude in thinking about principles and rationale underneath common phenomena and applying the knowledge learned in class to explain observations in daily lives also establishes a learning model for other classmates. Feiting is currently joining the exchange program in Columbia University in the City of New York and is awarded the High Fashion Charitable Foundation Exchange Scholarship.

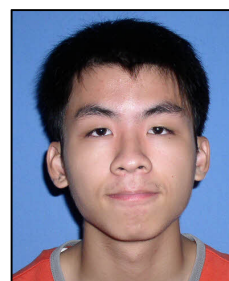


10. **Ching Pui WAN (Year 3; IRE)**

温政培

三年級理學士(數學) - 國際科研本科生

Ching Pui is in his third year of study in the elite IRE (International Research Enrichment) program majoring in Mathematics (PMA track), and is also taking Computer Science as the second major. His excellent academic attainment brings him the Dean's List Award, The Commercial Radio 50th Anniversary Scholarship, Dr. Samson Sun Scholarship Fund and the University's Scholarship Scheme for Continuing Undergraduate Students. In last winter, Ching Pui and his team members participated in the BigDatathon which was a competition jointly hosted by HKUST and RADICA that focusing on the application of big data, data analytics and data science. During the competition, his team "RestaurantFlow" had ranked the restaurants in Hong Kong by inferring posts on Instagram and they were proudly presented the First Runner-up Award and the Best Entrepreneur Award.



11. **Tong YUAN (Year 2; IRE)**

袁通

二年級理學士(數學) - 國際科研本科生

Tong is our year-two student pursuing the Bachelor of Science (Mathematics) Degree in International Research Enrichment track, as well as one of the selected students to study in The S.S. Chern Class. He has achieved grades A or A+ for all the attempted mathematics courses in the previous semesters. Tong maintains his CGA always above 4.0 upon his study at HKUST. As an encouragement for his outstanding academic accomplishment, Tong has been presented the Dean's List Award and the Chern Class Scholarship. To strive for academic excellence, Tong shares his study tip which is to find the connections between various concepts in order to have a better understanding. This studying approach facilitates his memorization and paves way for his academic achievement.



Three Mathematics students receive Honorable Mention

1. **Xue BAI 白雪**

(UG Year 4; MAEC) *left photo*

2. **Silin HUANG 黄斯琳**

(UG Year 4; MAEC) *middle photo*

3. **Elfarouk Yasser Farouk M. A. HARB**

(UG Year 3; GM) *right photo*

