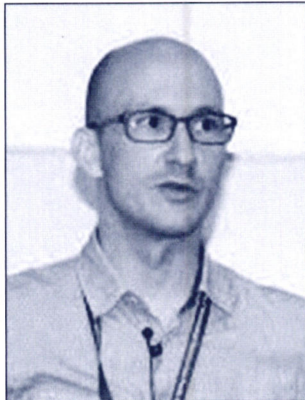


Singapore Mathematical Society Events and Activities 2017



1. SMS Lecture Series

- This annual lecture series, which is traditionally organized in conjunction with the Annual General Meeting of the Singapore Mathematical Society, features eminent local mathematicians or mathematics educators to share with the public some of their interests and ideas.
 - Date: 10 March 2017
 - Venue: LT28, NUS
 - Title: Deep Learning
 - Speaker: A/Prof Adrian Roellin
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- Adrian Roellin graduated in mathematics and computer science from the University of Zurich in 2002, where he also received his Ph.D. in 2006. After postdoctoral positions at the University of Oxford, University of Berne and NUS, he joined the Department of Statistics and Applied Probability at NUS in 2009, where he is now associate professor. His research focus is probability theory and statistics, but he has always maintained a passion for artificial intelligence.
 - Artificial Intelligence was supposed to revolutionise our lives for many decades now, yet few concrete products have resulted from this line of research. Is the latest iteration of artificial neural networks finally going to fulfil this promise? The speaker argued that, despite the recent hype, there is still a long way to go.

2. Distinguished Visitor Programme

- This year, Singapore Mathematical Society, in collaboration with the Association of Mathematics Educators, invited Professor Ron Aharoni from Technion to be the speaker at the Distinguished Visitor Programme. During his two-week visit in February, Professor Aharoni conducted seven sessions of lectures and workshops for mathematicians, teachers, students and the public. The public lecture was held on 10 February at NUS LT31.



Professor Ron Aharoni at a colloquium talk in NTU

3. Singapore Mathematical Olympiad 2017

- Dates:
 - 30 May (Junior and Senior section - First round)
 - 31 May (Open section - First round)
 - 24 June (Junior and Senior section - Second round)
 - 1 July (Open section - Second round)
- The Society conducted the Singapore Mathematical Olympiad (Junior, Senior and Open Sections) in May/June 2017. A total of 7406 students from 273 schools participated in the various sections of the Olympiad.
- For Junior section, there are 3462 participants from 108 schools. For Senior section, there are 2291 participants from 94 schools. For Open section, there are 1653 participants from 71 schools. In addition, there were 207 participants from Malaysia, Indonesia and Vietnam.
- The SMO Subcommittee 2016 consists of
 - Associate Professor Victor Tan (Chairman)
 - Dr Hang Kim Hoo (Deputy Chairman/Administration)
 - Dr Toh Pee Choon (Junior Section Coordinator)
 - Dr Ku Cheng Yeaw (Senior Section Coordinator)
 - Associate Professor Toh Tin Lam (Open Section Coordinator)
 - Associate Professor Tay Tiong Seng (Second Round Coordinator)
- The results of SMO are published in the SMO Problem and Solution book.

4. Singapore Mathematics Projects Festival 2017

- Dates:
 - 18th February 2017 (Preliminary round A)
 - 25th February 2017 (Preliminary round B)
 - 1st April 2017 (Festival Congress – Final round)
- This year the Project Festival attracted 21 projects from Junior section and 27 projects from Senior section.
- The preliminary rounds were held at various locations, including Catholic High School, Dunman High School, NUS High School of Mathematics and Science, National University of Singapore. Judging panels made up of Mathematicians and school teachers were formed to grade the presentation of each team.
- 6 teams from the Junior section and 5 teams from Senior Section were invited to the Festival Congress held at NUS High School of Mathematics and Science
- The judges for the Festival were Ku Cheng Yeaw, Tay Tiong Seng, Teo Kok Ming, Toh Pee Choon, Wang Fei, Zhao Dongsheng,
- Medals were awarded to the following projects:
 - Junior section**
 - Gold: Trigonometrical inequalities, NUS High School of Mathematics and Science
 - Gold: Tower of Hanoi and its variations, National Junior College
 - Silver: The Sentosa strategy, Methodist Girls' School
 - Silver: Gambler's ruin, NUS High School of Mathematics and Science
 - Silver: Analysis of 2048 strategies, NUS High School of Mathematics and Science
 - Silver: Meffert's Pyraminx, Hwa Chong Institution
 - Bronze: Wefie taking, Nanyang Girls' High School
 - Bronze: Project NIM, Hwa Chong Institution
 - Bronze: Easing hospital wards allocation issues using graph colouring, Nanyang Girls' High School
 - Bronze: Approximating Pi through geometrical mean, Hwa Chong Institution

Senior section

- Gold (Foo Kean Pew Memorial Prize): The congruency of “iso-peri-area” triangles, Hwa Chong Institution
- Gold: A refinement of Fejer-Jackson inequality, NUS High School of Mathematics and Science
- Gold: An elementary approach to Euler’s sums via trigonometric series, NUS High School of Mathematics and Science
- Silver: Kakeya needle problem, Paya Lebar Methodist Girls’ School (Secondary)
- Silver: The painting problem, Catholic High School
- Bronze: Fractals, Temasek Secondary School
- Bronze: Venn-ture the unknown, Clementi Town Secondary School

5. Annual Prize Presentation Ceremony

1. Date: 02 September 2017
2. Venue: NUS High School of Mathematics and Sciences
3. Guest of Honour: **Professor Samuel Kou, Director, Institute of Data Science, NUS**
4. The following prizes were given out at the ceremony:
 - 6 prizes for the Singapore Mathematics Project Festival (Junior Section)
 - 8 prizes for the Singapore Mathematics Project Festival (Senior Section)
 - 9 prizes for the SMS Essay Competition (3 each in categories A, B and C)
 - 30 individual prizes for the Singapore Mathematical Olympiad (Junior section)
 - 30 individual prizes for the Singapore Mathematical Olympiad (Senior section)
 - 30 individual prizes for the Singapore Mathematical Olympiad (Open section)
 - 39 School Awards for the Singapore Mathematical Olympiad (Category 1)
 - 24 School Awards for the Singapore Mathematical Olympiad (Category 2)
 - Awards to the Singapore Team to the 58th International Mathematical Olympiad

6. Mathematics Teacher Conference 2017

Almost 600 participants, mostly local mathematics teachers, attended the Mathematics Teachers Conference 2017 which took place on 1st June 2017 at Nanyang Technological University/National Institute of Education (NIE). The event was co-organized by the Mathematics & Mathematics Education Academic Group of NIE and the Association of Mathematics Educators, and supported by SMS. Several SMS members were invited to deliver lectures and workshops for the teachers.



*Workshop delivered by
A/P Yap Von Bing*



*Workshop delivered by
Dr Hang Kim Hoo*



*Mathematics Teachers'
Conference 2017*

7. Singapore Mathematics Projects Festival 2017

This year, we organized the 7th SMS essay competition with the theme “Mathematics and Big Data”. The competition was officially launched on 10 March 2017 during a lecture of the SMS Lecture Series: Deep Learning by Prof. Adrian Roellin. In view of the burgeoning field of data science, the competition aimed to expose the students to this novel field and to let the students discover applications of Mathematics in various aspects of Big Data.

By the closing date of 7 July 2017, we received a total of 60 essay entries from 17 schools with the following breakdown: Category A (secondary 1 & 2 or equivalent): 13, Category B (Secondary 3 & 4 or equivalent): 31, Category C (JC or equivalent): 16.

The judges for the competition were:

Category A: Ms. TAN Hwee Chiat June (MOE) and Mr. ANG Chung Chung Alex (MOE).

Category B: Mr. YEO Chee Heng Dennis (MOE) and Ms. Angeline SU (MOE).

Category C: Assoc. Prof. Adrian ROELLIN (NUS) and Mdm. Leng LOW (MOE).

The winning essays are:

Category A

1st: “Big Data and Topographical Data Analysis” by Soh Yong Xiang, Tan Jen Han and Tan Jia Jun Shaun from Hwa Chong Institution.

2nd: “The World of Big Data and Mathematics” by Lum Jie Qi Steffi, Sarah Soon Hui En and Seet Seow Chee from Paya Lebar Methodist Girls’ School (Secondary).

3rd: “Big Data Analytics – Predicting Traffic Levels in Smart Cities Using Machine Learning and IoTs” by Guru Anand Anish from St. Joseph’s Institution.

Category B

1st: “Mathematics and Big Data” by Han Jiatao Jerry from Raffles Institution.

2nd: “Walking into the Mathematics behind Big Data: Data is the new currency in the brave new digital world” by Regina Limanta and Megan Png Jing Ting from Paya Lebar MGS (Secondary).

3rd: “An Interdisciplinary Analysis of the Significance of Data Mining and Information Security” by Ng Shen Ray, Ng Jun Rui and Max Wu Wen Jie from Hwa Chong Institution.

Category C

1st: “Airline overbooking with mathematics and Big Data” by Jovon Lim Jun Wei, Hu Xingyi and Xavier Goh Jia Qing from Victoria Junior College.

2nd: “The use of Markov chain for search optimisation in the world of Big Data” by Ivan Feng Jun Kai, Wayne Yeo Wei Zhong and Gao Changxiang from Victoria Junior College.

3rd: “Linear regression and its applications in Big Data” by Nguyen Tuan Dung from Anglo-Chinese School (Independent).