

**Press Release**

**For Immediate Release**

**Hong Kong Computer Society 2012 Alan Turing Year Series, Public Seminar on**

**“Alan Turing and the Computing Revolution: Ten Big Ideas that Changed the World”**

*By Prof. Barry Cooper, Chair of Turing Centenary Advisory Committee*

*Celebration Events Held Worldwide for the Centenary of Alan Turing’s Birth*

**May 23, 2012 • HONG KONG** — In commemorate of the Centenary of Alan Turing’s birth, the father of computer science and artificial intelligence, the year of 2012 is named the Alan Turing Year. Grand celebration events are held all over the world to praise Alan Turing’s contribution to science and human civilization, places include Brazil, Canada, China, Czech Republic, France, Germany, Philippines, the United Kingdom and the United States. There is no exception in Hong Kong. Hong Kong Computer Society (HKCS) will launch a series of popular science talk in 2012, it is honorable to invite Prof. Barry Cooper, Chair of Turing Centenary Advisory Committee (TCAC) and Professor of Mathematical Logic from University of Leeds, to present a public talk today on **“Alan Turing and the Computing Revolution: Ten Big Ideas that Changed the World”**. Prof. Barry Cooper will introduce Alan Turing's life, the outstanding contribution to the birth of Computer, and the impact on human life to Hong Kong people. Prof. Cooper will also give an overview of global Turing activities. The talk is free admission.

Mr. Stephen Lau, JP, President of HKCS, said: “Alan Turing is an outstanding scientist, with significant achievements in computer science, artificial intelligence, developmental biology, and the mathematical theory of computability. His contribution in bringing peace to the world, by breaking the German naval Enigma code and saving British Navy during World War II, was also undeniable. Turing is the father of computer science and artificial intelligence, who had a marked impact on the development of today's computer and information technology, as well as modern life and business operations. HKCS aims at raising public awareness and their interest in IT through a better understanding of Alan Turing and his great contribution to human civilization, thus driving the advancement of information technology in Hong Kong.”

Mr. Stephen Lau pointed out that since the very beginning of 2012, a number of major celebration events had been taking place globally, including Turing exhibitions, seminars, performances and competitions, in addition there are variety of special commemorations for this genius’ centenary, including books and articles in printed media about Turing and his scientific theory, broadcasts, videos, music and even films. Most of these will be linked

to places with close significance in Turing's life, such as Cambridge, Manchester and Bletchley Park.

Born on 23rd June 1912, Alan Turing was a Fellow of King's College, Cambridge University. In 1936, Alan published the landmark paper 'On Computable Number, with an application to the Entscheidungsproblem'. This paper became a mathematical proof on an important mathematical philosophical problem, the decision problem of the Formalism proposed by the great German mathematician, David Hilbert in early 20th century.

At the first part of his paper, he invented a mathematical tool for the proof, the Turing Machine that lays the theoretical foundation of modern digital computer. It was this by-product of the paper that had the profound effect of influencing the life of nearly everyone in this digital age.

The Turing Machine is a realization of computation mechanization and it also demonstrates the truly vital idea embodied in the modern computer, internally stored modified program, the idea of storing programs in the same form as data. Thus, a program can now be treated as data to another program.

In the same paper, he demonstrated this concept by writing a program, called the Universal Turing Machine (UTM), which read other programs (now treated as data to UTM) and simulates the behavior of the other programs. It is the same idea of modern computer: different programs running on the same computer.

More importantly, he also pointed out the limitation of the Turing Machine (thus modern computer) that it can simulate but cannot determine in advance whether the program it simulates will stop erroneously or not, which is also the limitation of modern computer. That is why there is no program that can do debugging, despite all the other powerful programs ever developed since then.

Alan has made contribution in helping England to fight against Nazi Germany during the most difficult period in World War II. During 1939-1941, Britain was nearly forced to its knee when her only supply line over the Atlantic was seriously cut off by the German submarines, the Wolf Pack. Alan Turing single-handedly broke the German naval Enigma code and thus, thousands of convoy ships were spared from the fatal submarine attack.

After the war, he was involved in the first few computer projects in Britain, the Automatic Computing Engine (ACE) and the Manchester Mark-1. His UTM idea was picked up by

John von Neumann and this was reflected in his First Draft of Report on Electronic Discrete Variable Automatic Computer (EDVAC). The following development became history and is well known by everyone.

In 1950, Turing published a paper that has come to rival his 1936 paper as his most famous work. The paper asked a question that has reverberated in philosophy, cognitive science and computer science ever since: “can machine think?” The famous Turing Test was proposed and this founded the field of Artificial Intelligence (AI) research. Over a decade after the world chess champion was defeated by Deep Blue, the Turing Test is still not yet passed by any computer program, the Loebner prize of US\$100,000 waiting for the winner until now.

Despite the many significant contributions, his story was not well aware of by others until recent years. This is partly because his wartime effort was highly classified as national secret until the 70s and partly because the British government dishonorable treatment of his homosexual attitude that lead to his suicide with cyanide poisoning on 7 June 1954, at the young age of 41.

It was only in recent years that his name was getting more popular through a small group of people whole heartedly promoting his story and re-establishing his honor to the right proportion. In 2009, a petition urging the British Government to posthumously apologise to Alan Turing for prosecuting him as a homosexual received over 30 thousand signatures. Prime Minister Gordon Brown acknowledged the petition, releasing a statement on September 10, 2009 apologising to Alan Turing. The year of 2012 was even named as Alan Turing Year.

Turing Year activities around the world are coordinated by the Turing Centenary Advisory Committee (TCAC) comprising of professors, specialists and academics from computer science sectors in different regions and different countries. Prof. Barry Cooper, Professor of Mathematical Logic at the University of Leeds, was elected as the Chairperson. By invitation of HKCS, Prof. Barry Cooper visited Hong Kong and gave a free admission public talk on “Alan Turing and the Computing Revolution: Ten Big Ideas that Changed the World” tonight. He will introduce to Hong Kong public about Turing’s life and work, and his significant contribution to the birth of computer as well the great impact on human life, in addition to provide an overview of global Turing Year Activities. Prof. Barry Cooper will attend a Distinguished Speaker Luncheon organized by HKCS tomorrow.

Mr. Stephen Lau further: “HKCS has launched before a series of popular science talk,

called Turing Trilogy on a) Universal Turing Machine; b) breaking the Enigma code; and c) the Turing Test, delivered by Mr. Cambridge Wong, IT specialist and one of the 1st graduates in Computer Science from the Chinese University of Hong Kong. Later this year in June and November, HKCS will co-organize exhibitions on Alan Turing.”

Mr. Stephen Lau encouraged Hong Kong public to actively participating in this meaningful activity series, to commemorating the pioneer of the computer science and artificial intelligence, and getting to understand how Turing change the world with computer science. He eagerly expects that people, especially young generation in Hong Kong, could follow Turing in active use of computer and ICT technology to change the world and create the future.

For more details about HKCS Turing Year Activities, please refer to the HKCS Turing Year page: [http://www.hkcs.org.hk/campaign/HKCS\\_Alan\\_Turing\\_Year/#](http://www.hkcs.org.hk/campaign/HKCS_Alan_Turing_Year/#).

Worldwide Turing Year activities are available at:

<http://www.mathcomp.leeds.ac.uk/turing2012/>.

### **About Prof. Barry Cooper**

Born in 1943, Prof. Barry Cooper is a British mathematician and computability theorist, currently Professor of Mathematical Logic at the University of Leeds. His book Computability Theory has made this basic but technical research area accessible to a new generation of students. He is a leading mover of the return to basic questions of the kind considered by Alan Turing, and of interdisciplinary developments related to computability.

Prof. Barry Cooper graduated from Jesus College, Oxford in 1966, and in 1970 earned his Ph.D from University of Leicester. He is currently President of the association Computability in Europe, and is Chair of the Turing Centenary Advisory Committee (TCAC).

### **About HKCS**

The Hong Kong Computer Society (HKCS) is a non-profit professional organisation established in 1970, which strives to improve and develop Hong Kong's Information Technology (IT) industry. Being the most well-established and the largest professional association in Hong Kong, HKCS is dedicated to promote the highest professional standards for the industry. HKCS members are from a broad spectrum of Hong Kong's IT industry, from corporate users to individual talents, all working together for the benefit of

the industry.

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# Appendix

Name	日期 Date	時間 Time	地點 Venue		Remarks
2012 艾倫圖靈誕生一百週年紀念小型展覽 2012 "Alan Turing Centenary" Commemoration Mini-Exhibition	13.06 – 30.06. 2012	上午 10:00 – 下午 8:00 10:00a m – 8:00pm	香港藝術中心三樓實驗畫廊 Experimental Gallery, 3/F., Hong Kong Arts Centre	免費入場 Free Admission	查詢 2834-2228 / <a href="mailto:communications@hkcs.org.hk">communications@hkcs.org.hk</a>  * 逢星期日下午二至四時會有專人導賞介紹 * There will be guided tour on the exhibits every Sunday 2:00-4:00pm
2012 艾倫圖靈誕生一百週年紀念小型展覽 – 展覽開幕禮 2012 "Alan Turing Centenary" Commemoration Mini-Exhibition – Exhibition Opening Ceremony	13.06. 2012	下午 6:00 – 6:30 6:00 – 6:30pm	於香港藝術中心三樓實驗畫廊外 Outside of Experimental Gallery, 3/F., Hong Kong Arts Centre	免費入場 Free Admission	查詢 2834-2228 / <a href="mailto:communications@hkcs.org.hk">communications@hkcs.org.hk</a>
圖靈三部曲公開講座： 第二部之密碼戰爭 Turing Trilogy Public Talk (Part 2): The Code War	22.06. 2012	下午 7:00 – 9:00 7:00 - 9:00pm	中環美國銀行中心 1 樓 A·中大專業進修學院演講 廳 Lecture Theatre of School of Continuing & Professional Studies (CUHK), Unit A, 1/F, Bank of America Tower, Central, Hong Kong	免費入場 Free Admission	查詢 香港中文大學讀書會 Chinese University of Hong Kong Book Club <a href="http://www5.cuhk.edu.hk/oge/index.php/tc/2011-06-24-02-57-46/bookclub">http://www5.cuhk.edu.hk/oge/index.php/tc/2011-06-24-02-57-46/bookclub</a>
圖靈百歲冥壽紀念茶會 Turing Centenary Commemorative Party	23.06. 2012	下午 7:00-9: 00 7:00 – 9:00pm	香港藝術中心四樓黑麥餐廳 Pumpnickel, 4/F, Hong Kong Arts Centre	By Invitation	查詢 2834-2228 / <a href="mailto:communications@hkcs.org.hk">communications@hkcs.org.hk</a>
圖靈綜合紀念晚會 Turing Commemorative Variety Evening	28.06. 2012	下午 7:00 - 10:00 7:00 – 10:00p m	香港藝術中心麥高利小劇場 McAulay Studio, Hong Kong Arts Centre	免費入場 Free Admission	查詢 2834-2228 / <a href="mailto:communications@hkcs.org.hk">communications@hkcs.org.hk</a>
圖靈三部曲公開講座： 第三部之人工智能 Turing Trilogy Public Talk (Part 3): From Turing Machine to Artificial Intelligence	09.11. 2012	TBC	TBC	免費入場 Free Admission	查詢 香港中文大學讀書會 Chinese University of Hong Kong Book Club