Nobel Prize of Computer Science

WE ALL KNOW about the Nobel Prizes, given in chemistry, physics, physiology or medicine, as well as literature and peace.

When Alfred Nobel drew up his will in 1895, these were the areas he deemed to "confer the most benefits to mankind." But today, one can argue that one of the most important fields that has benefited mankind is computer science. So while one can understand that Nobel would not have foreseen the emergence of computers and their impact on mankind, one can ask today whether there is an equivalent of a Nobel Prize for Computing to honor such an important field.

Well, indeed there is.

Since 1996, the annual Turing Award has been widely recognized to have played this role. The award is given in honor of Alan Turing, widely recognized as the father of computer science, and artificial intelligence.

Most lay people know about his work on the breaking the German code machine Enigma during WWII, through the popular movie *The Imitation Game*.

That effort led to the development of the modern computer and programming.

But to computer scientists, he is most well-known for the Turing Test – which stipulates that a machine should be considered "intelligent" if a human cannot distinguish it from a human through anonymously interacting with it. Many consider it the beginning of the field of artificial intelligence. So it is quite appropriate to name the most prestigious prize in computer science after him.

Unlike Nobel, Turing did not give the money for the prize money. In the beginning, the Turing Award prize money was very modest, but starting in 2014, the Award came with a monetary award of US$1 million (HK$7.8 million), funded by Google. Surely this amount was set to equal that of the Nobel Prizes.

Being a computer scientist myself, I studied Turing's work as a student and have of course known about the Turing Awards. But what started me writing about it now is the recently announced 2017 award.

One of the awardees was John Hennessy, the former president of Stanford University, whom I have known for over 40 years and whom I met in his Stanford office only weeks before his award was announced.

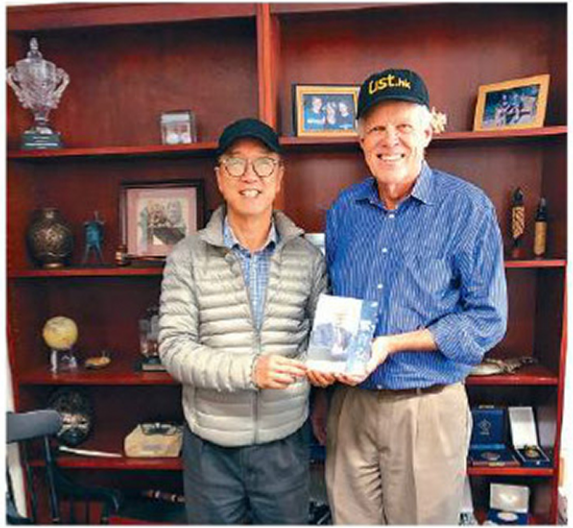
Very few university presidents have won prestigious awards in their own scholarly fields.

For background research, I looked up the list of Turing awardees. Unsurprisingly, the inventors of the internet and the world wide web are among them.

Of the 67 awardees since the award was first given in 1966, I personally know about 20 of them.

Quite a number of them were on the Stanford faculty when I was a student there. The very first awardee, Alan Perlis, was the department chairman who hired me to my first faculty position at Yale.

Surprisingly, there has only been one ethnic Chinese awardee, Andrew Yao, who a decade ago famously gave up his Princeton position for Tsinghua University, where he has been training some of the brightest students in theoretical computer science in China.



Tony Chan with Turing Prize winner and former Stanford president John Hennessy.

While the Turing Award is the most prestigious, there are several other awards given for computer related work. One well known to mathematicians is the quadrennial Nevanlinna Prize, which is awarded by the International Mathematics Union for the best work in mathematical aspects of computer science by someone aged 40 or under – a Fields Medal for computer science (both award ceremonies are at the same occasion).

I am the chair of the selection committee for the 2018 prize, which will be awarded in August in Rio de Janeiro.

Another is the von Neumann Medal, which is awarded by the Institute of Electrical and Electronic Engineers, in honor of John von Neumann, a mathematical giant who is credited with pioneering the architecture of modern electronic computers.

The more recently founded "Chinese Nobel", the Future Science Prize, also includes computer science.

However, the Shaw Prize, Hong Kong's answer to the Nobel Prize, does not.

Will the Turing Award one day exceed the Nobel Prizes in prestige? Although I don't see that happening any time soon, I do think that, with the increasing importance of computing in every aspect of our lives, this will happen in the future.