

Mathematical Colloquium Series

**Department of Mathematics
Faculty of Science and Technology**

Will artificial intelligence save the Mathematics?

Speaker: Prof. Qin SHENG

**Date: 29 October 2019
(Tuesday)**

Time: 8:30a.m. – 9:30a.m.

Venue: E22 – G013

ALL ARE WELCOME

Abstract

Is our mathematics correct or wrong? Kevin Buzzard, a number theorist and professor of mathematics at Imperial College London, suggests that it is time to begin a new area of artificial intelligence for answering the question. It is evident that the greatest proofs nowadays have become so complex that practically no human on earth can understand all of their details, let alone verify them. He fears that many existing proofs widely considered to be true are wrong. Needless to say, artificial intelligence is built on neural network based deep learnings. But what is a neural network and how to use it for approximating, or predicting, natural phenomena? In this talk, we tend to experiment with an explicit feedforward neural network (FNN) which is the basic in the literature. Multivariate data are approximated. There are two hidden layers in our FNN architecture. Their parameters are explicitly determined through training. We shall see that such a simple structured artificial intelligence model may interpret complicated data remarkably. Of course, based on it, you are encouraged to do more!

Prof. Qin SHENG

Prof Sheng is a professor of Department of Mathematics, Baylor University, USA. He got his PhD degree from the University of Cambridge under the supervision of Prof. Arieh Iserles in 1990. His research areas include splitting and adaptive numerical methods for solving linear and nonlinear partial differential equations.

