Recipient of the HKSS - John Aitchison Prize in Statistics, 2024

It is our pleasure to announce the recipient of the HKSS - John Aitchison Prize in Statistics for 2024.

Established in 2022 by the Hong Kong Statistical Society (HKSS), the prize is awarded in honor of the distinguished career and contributions of Professor John Aitchison (1926-2016), Chair Professor of Statistics at the University of Hong Kong between 1976 and 1989, and the founder and first President of the HKSS.

The purpose of the prize is to recognize excellence in PhD research, as demonstrated by a research paper, in Statistics or a closely related discipline. The prize is awarded once per year, with its current value set at HK$12,000. While normally only one award is given annually, the Adjudication Panel may recommend multiple awards with the prize amount to be shared by the awardees.

The 2024 recipient of the prize is Dr Guohao Shen (2022 PhD Graduate at the Chinese University of Hong Kong) for his paper "Deep Nonparametric Regression on Approximate Manifolds: Non-asymptotic Error Bounds with Polynomial Prefactors" published in the *Annals of Statistics*, 2023, Vol. 51, No. 2, 691–716. This paper is a joint work with Yuling Jiao, Yuanyuan Lin, and Jian Huang.

Dr Guohao Shen

The citation accompanying the award reads as follows:

"The research work has three notable contributions: (a) the error bounds of the estimator based on deep neural networks achieve the minimax optimal rate and improve upon existing results by depending polynomially on the predictor's dimension, rather than exponentially; (b) the study demonstrates that the neural regression estimator can overcome the curse of dimensionality under the assumption that the predictor is supported on an exact or approximate manifold; and (c) the work derives a novel approximation error bound for Hölder smooth functions using ReLU activated neural networks, which is of independent interest and has applications in various other deep learning problems. The research can be placed in the broader context of statistical machine learning, particularly deep learning, which has demonstrated remarkable empirical successes in various applications."

The Adjudication Panel for the 2024 award consists of Professor Ngai Hang Chan (Chairman) of the City University of Hong Kong, Professor Jian Huang of the Hong Kong Polytechnic University, and Professor Zudi Lu of the University of Southampton.

The Prize is supported by funds provided by the following sponsors:

- Department of Management Sciences, City University of Hong Kong
- Department of Mathematics and Information Technology, the Education University of Hong Kong
- Department of Mathematics, Hong Kong Baptist University
- Department of Statistics and Actuarial Science, the University of Hong Kong
- Hang Seng Indexes Co. Ltd
- Hong Kong Statistical Society

Congratulations once again to Dr Guohao Shen on this outstanding achievement.