

**INSTITUTE OF MATHEMATICAL SCIENCES  
UNIVERSITI MALAYA**

**MONTHLY RESEARCH SEMINAR SERIES (1/2022)**

**Title:** Logical Permutation in Logic Mining: Game Changer in Knowledge Extraction  
**Speaker:** Dr. Mohd Shareduwan Mohd Kasihmuddin  
(School of Mathematical Sciences, Universiti Sains Malaysia)  
**Date:** 14/01/2022 (Friday)  
**Time:** 3.00 pm – 4.00 pm  
**Platform:** Google Meet  
Google Meet joining info  
Video call link: <https://meet.google.com/nwy-kaqq-tum>  
Or dial: (US) +1 402-922-6581 PIN: 187 649 062#

**ABSTRACT**

The logical rule that has been embedded in Hopfield Neural Network (HNN) has long suffered from a lack of interpretability and accuracy. This has severely limited the practical usability of logic mining because dynamical behaviours of logic mining in real datasets are strongly dependent on its logical structure. Logical permutation consists of a finite arrangement of attributes that makes logical rule became true. By utilizing the effect of permutation, the output obtained by logic mining can be improved. In this talk, the effect of logical permutation in logic mining integrated with recurrent Hopfield Neural Network will be discussed in detail. Several benchmark datasets will be used to validate the effect of logical permutation. Based on the experimental result, different permutations of the induced logic will significantly improve the performance metric. This finding will lead to a better understanding of logic mining in doing real-life datasets.

*All are Welcome*