

ICISSET Invited Speaker

International Conference on Innovations in Science,
Engineering and Technology (ICISSET 2018)
ISBN : ****

Early Design Space Exploration of Networks-On-Chip (NoC)

Dr. M. Norazizi Sham Bin Mohd Sayuti,
Senior Lecturer,
Faculty of Engineering and Built Environment,
Universiti Sains Islam Malaysia,
71800 Nilai, Negeri Sembilan, Malaysia
e-mail; azizi@usim.edu.my

Abstract: Networks-On-Chip (NoC) is seen as a new network paradigm for addressing the limitation of the current bus-based communication in multi-core embedded systems. Some of these systems are designed for executing hard real-time services such as in flight and automotive controls. In such systems, the services have to deliver output within strict timing constraints since the lateness in output delivery could cause severe consequences to human life. Task mapping is a crucial step for integrating an application and a hardware platform during system design. Existing schedulability analyses are available to evaluate the hard real-time performance of task mapping, but exploring the vast number of task mappings at the early design stage can be challenging due to several issues. These issues are caused by the influence of other design parameters on the hard real-time performance produced by task mapping, the existence of conflicting design objectives with the hard real-time system constraints, the restriction of the current hard real-time evaluation functions for searching alternative task mappings and the enormous evaluation of population-based search heuristics in the current task mapping techniques. We explain how an evolutionary algorithm addresses these design space exploration issues.



Biography: Norazizi Sham Mohd Sayuti was born in Johor, Malaysia in 1977. He graduated in Electronic Engineering from the Shibaura Institute of Technology (SIT), Japan in 2001. In 2004 he obtained an MSc in Computer Science from the Universiti of Teknologi Malaysia (UTM), Malaysia. He completed his PhD research at the University of York in 2015. He joined Universiti Sains Islam Malaysia (USIM) in 2009 as a Lecturer. In 2016 he was promoted to Senior Lecturer. Since 2017 he holds a position as the Head of Electronic Engineering Department at the Faculty of Engineering and Built Environment, Universiti Sains Islam Malaysia. He is a professional technologist of Malaysia's Board of Technologist (MBOT), registered with Malaysia's Board of Engineers (BEM), and a member of Institute of Electrical and Electronics Engineers (IEEE).