

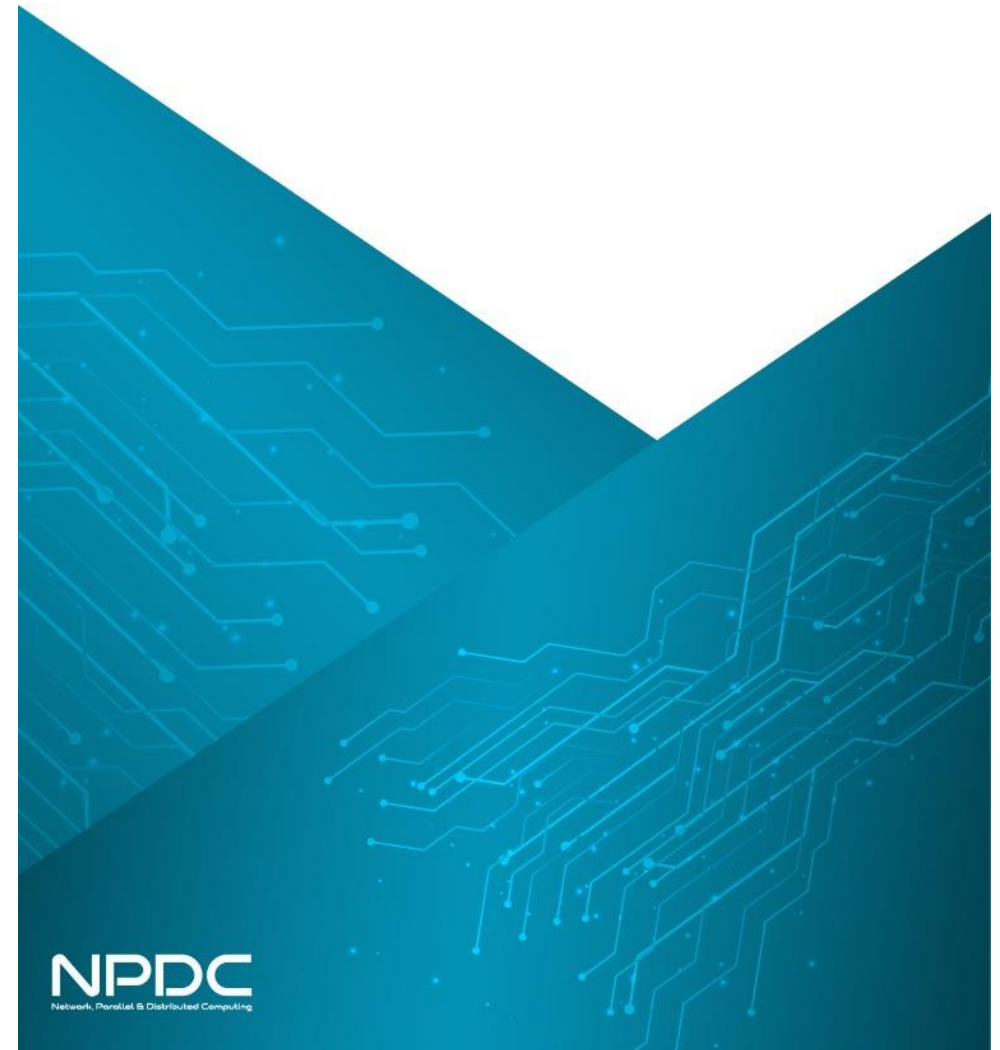
## Research Members

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# NPDC

Network, Parallel & Distributed Computing



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The Network, Parallel and Distributed Computing (NPDC) research group was formed in 1998 to encounter the imminent challenge in network, parallel and distributed computing. The objective of this group is to provide expertise to support the needs of the public and industry sectors, and the growing interest of the community to the knowledge workers and ICT-oriented resident. The group played an important role in contributing the research ideas to the bachelor, master and PhD programs offered by the faculty. Hence, many expertise in this field have been produced and contribute their knowledge to the nation.

Networking and distributed systems provide the infrastructure for computation, communication and storage involving a heterogeneous and potentially large number of people, hardware devices, and software processes. Issues of concern include performance, scalability, functionality, and manageability. The research in this group spans across a multitude of different types of distributed computing networks, from wireless and wire line networks to social and cyber-physical networks. The NPDC group research aims at improving and developing the protocols, system architecture, and underlying principles and seeks to understand the fundamental correctness and performance limits of the networks, explore the design of protocols and architectures that can substantially improve the experience of end-users, and validate them through simulations and implementations on real platforms.

### Research Interest

- parallel and distributed computing
- grid and cloud computing
- peer-to-peer computing
- Internet of Thing
- multicores and GPGPU architecture
- software defined networking
- System on Chip (SoC) and Network on Chip (NoC),
- interconnection network, high speed wired and wireless networks
- routing and multiprocessor scheduling algorithms
- network protocols development, network management, network analysis and design, network security
- network and communication reliabilities, fairness issues, quality of services
- Issues related to distributed real-time intensive and big data were the main challenge in order to provide scalability, fairness and harness resources ranging from local area network (LAN) to the Internet and Cloud services; and from mobile devices to supercomputers.

### Projects/Grants

- 1. Reliable Resource Scheduling using Self-learning Optimization in Crowd Computing.**  
Assoc. Prof. Dr. Masnida Hussin  
February 2018 – February 2020
- 2. Optimizing Spare Buffer Blocks in Hybrid Flash Translation Layer (FTL) Mapping for NAND-based Solid-State Drive (SSD)**  
Dr. Amir Rizaan Rahiman  
February 2018 – Januari 2020
- 3. Energy-aware Scheduling using Dynamic Scaling Theory in Cloud Datacenter**  
Assoc. Prof. Dr. Masnida Hussin  
February 2018 – February 2020
- 4. Parallel Computing to Improve High Computational Density Clustering Algorithms of Big Data.**  
Assoc. Prof. Dr. Nor Asilah Wati Abdul Hamid  
November 2017 – November 2019
- 5. Developing online performance evaluation tool for assessing student participant in community services for course assessment in University Putra Malaysia.**  
Assoc. Prof. Dr. Masnida Hussin  
1 November 2017 – 1 August 2019
- 6. Enhancement Augmented Shuffle Exchange Network with Looping Method in Multistage Interconnection Network Reliability**  
Prof. Dr. Mohamed Othman  
Sept 2017 - Oct 2019
- 7. Hybrid Particle Swarm Scheduling for QOS Workflow of Cloud Computing**  
Assoc Prof Dr Rohaya Latip  
Feb 2017-August 2019
- 8. An enhanced energy-aware task scheduling algorithm exploiting time/utility function in multiprocessor environment for adaptive real-time systems**  
Dr. Idawaty Ahmad  
November 2015 – November 2017
- 9. A Secure Resource Provisioning Mechanism for High Reliability Using Trust and Recovery Methods in Intercloud Environment**  
Mohd Noor Bin Derahman  
December 2014 – November 2017
- 10. A Great Deluge Algorithm with Novel Bi-Decay Rate for Efficient Job Scheduling in Grid Computing Environment**  
Assoc. Prof. Dr. Abdullah Muhammed  
July 2014 – June 2017