Opening for a Research Assistant to work in the field of wireless and mobile computing. Funded by Fundamental Research Grant Scheme (FRGS) of KPT, this project allocates RM1500 per month of allowances and the duration is for 2 years. The successful applicant shall register as a full time Masters by Research with USM and the tuition fees shall be borne by him/herself. The start date would be as soon as possible. Any further enquiries please email to **azizul@cs.usm.my, Dr. Azizul Rahman B. Mohd Shariff, 04-6532486**

Background

The main design philosophy of 5G is to create a human-centric platform that enables technologies, systems and networks to globally interact, inter-connect, and communicate into a flexible and dynamically operating architecture. As such, static usage of services from a single operator may no longer be capable of satisfying user demands in the near future, although in reality, there exists a variety of wireless technologies that are accessible by the users. Therefore, Cellular Network Cloud and Utility Cellular Networking have been proposed as a means to explore the possibilities for such revolution in the way in which cellular networks are owned and operated. The challenge of Future Wireless Networks (FWN) would be how to achieve the overall optimum trade-off between resource utilization and user-level Quality of Service (QoS) in heterogeneous wireless networks. Joint/Common Radio Resource Management (CRRM/JRRM) and Dynamic Spectrum Allocation (DSA) are both promising approaches in the heterogeneous networks to increase overall QoS and spectrum efficiency. However, not much research has been done about how they could work together, optimally in the 5G environment. Through extensive analytical and simulation study, this research is aimed to produce a new method in selecting the optimum wireless access, which optimizes the overall resources and at the same time optimize per-user QoS.

Objectives

- To design mobility model that take into consideration the system technical information and application aspects which will reduce the unnecessary vertical handover.
- To propose user-network based admission control method.
- To design traffic offloading algorithm with the optimal value of traffic to be offloaded from macro to micro network in order to cater for users that will maximize the operators revenue.

Requirements

- Applicants should have experience in C/C++ programming and MATLAB.
- Applicants should be able to demonstrate knowledge of wireless communications, mobile computing and networking.
- Applicants should have at least a 2nd Class Honours - Bachelors Degree or equivalent, in Computer Science, Computer Engineering, Software Engineering, Electrical Engineering, or a closely-related subject.
- Applicants must be **MALAYSIAN** only