WORK PLAN AND METHODOLOGY

Introduction and theoretical background of optimization will be surveyed. It will discuss about global optimization, its types and challenges.

The Swarm Intelligence (SI) techniques and its necessity in optimization will be discussed. SI is an innovative distributed intelligent paradigm for solving optimization problems. SI originally took its inspiration from the swarming, flocking and herding phenomena of the biological agents. One of the SI techniques is Artificial Bee Colony (ABC) which was introduced by Karaboga in 2005. The Artificial Bee Colony (ABC) algorithm was developed to mimic the behaviors of the real bees in finding food source (the nectar) and sharing the information of the nectar to the other bees in the hive. WSN which is a class of Wireless networks designated for monitoring region of interest will be studied. WSN are a set of tiny, autonomous, battery powered, spatially distributed and movable smart sensors that communicate with each other to monitor the field of interest.

The detailed literature survey on ABC algorithms and WSN will be carried. It further extends with the challenges of WSN and problem formulation.

This task will try to overcome the major challenges encountered by ABC on complex multimodal problems noticeably, the premature convergence and poor quality solution. The major contributions in the research will be the development of the variant algorithms

This task will try to apply the ABC variants to problems of Wireless Sensor Networks.