

Redundancy Effect of Vehicular Cloud's Environment using location estimate (ReViSE)

The rapid growth of modern wireless technology increases the invention of new applications using the concept of Internet of Things (IoT). Vehicular Cloud, which is a concept introduced recently to use the vehicles sitting idle for hours as a processing devices, has been a hot topic. This subject became more popular after the Department of Transportation's (DOT) announcement of mandatory wireless capabilities of each vehicle since 2015. We investigate the idea of benefiting from the unused processing power of vehicles sitting in parking lots for a long period of time (e.g. an airport, or train station). Moreover, researchers propose the concept of running the same job on several vehicles, to prevent the loss of jobs when a vehicle departures suddenly (quitting the assigned job). In this research, we study to reduce the redundancy effect by estimating how long a vehicle will stay in a specific parking lot, using information provided from the driver's smartphone (e.g. flight ticket schedule, or train schedule). This allows the vehicle to save the assigned job and prepare for job switching. A smartphone app would be installed on the driver's phone, without breaching the driver's privacy, to inform the system of the estimated amount of time each car can be used. This information would be encrypted to prevent security attacks. Our results shows an enhancement in the performance compared to redundancy mechanism.