**Abstract**:

Many mobile applications retrieve content from remote servers via user generated queries. Processing these queries is often needed before the desired content can be identified. Processing the request on the mobile devices can quickly sap the limited battery resources. Conversely, processing user-queries at remote servers can have slow response times due communication latency incurred during transmission of the potentially large query. We evaluate a network-assisted mobile computing scenario where mid network nodes with “leasing” capabilities are deployed by a service provider. Leasing computation power can reduce battery usage on the mobile devices and improve response times. However, borrowing processing power from mid-network nodes comes at a leasing cost which must be accounted for when making the decision of where processing should occur. We study the tradeoff between battery usage, processing and transmission latency, and mid-network leasing. We use the dynamic programming framework to solve for the optimal processing policies that suggest the amount of processing to be done at each mid-network node in order to minimize the processing and communication latency and processing costs. Through numerical studies, we examine the properties of the optimal processing policy and the core tradeoffs in such systems.

**Existing System:**

In the previous section we identified special properties of the optimal processing policy under various scenarios. We now examine some of these properties through numerical studies with example cost functions and systems. Latency, battery usage, and leasing costs have a tightly woven relationship.

**Disadvantages:**

i. Increasing battery usage will decrease latency and leasing costs, but also limits the lifetime of the mobile device.

ii.    Conversely, the lifetime of the device can be extended by increasing leasing costs which will decrease latency and battery usage.

**Proposed System:**

A user request originates at the Mobile Station (MS). In order to be completed, the request must be transmitted upstream to a remote Application Server (AS) via a Base Station (BS) and a series of relay nodes. We refer to the node at the first hop as the base station, but emphasize that the links between the BS, relay nodes, and AS may be wired or wireless. Similarly running a text to speech conversion application for usage scenarios.

**Advantages:**

i.      If the request processing is entirely done at the MS, the limited battery power can be drained.

**ii.**If the processing is done at the AS, communication latency can be high due to limited bandwidth of the wireless access link and large query size.