# Dynamic Offloading Algorithm for Cyber Foraging

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Advances in semiconductors and computing technologies have enabled small consumer devices such as smart mobile devices to perform heavy computations. Also, the mobile applications we use today are highly resource demanding. Though the mobile devices are capable of running heavy tasks their resources are limited compared to desktop computers or cloud computers. So, we can use the technology called Cyber Foraging which enables mobile devices to use cloud resources to perform resource demanding tasks. In this research paper, we are presenting an efficient algorithm to take decisions dynamically about offloading heavy tasks from mobile device to a resource rich cloud platform. We have identified the project named Rapid, which is the best opensource framework for cyber foraging so far and we implemented an algorithm on top of that project. In the Rapid framework offloading process is done in a static manner by annotating identified resource intensive methods at the development phases. Our algorithm considers the situational factors such as network bandwidth and battery level of the mobile device to take the decision. Also, it considers the previous execution details such as average power consumption and average execution time for **both** remote and local executions. If the battery level is high and power consumption and execution time for certain method is lower, then that method will not be offloaded to the cloud. If the battery level is lower than a threshold value and execution time is higher for certain method, then that method will be offloaded. We have tested our dynamic approach using n-queen algorithm. According to the results the decision-making algorithm helps resource poor mobile devices to execute resource intensive tasks efficiently and thus provides better and smooth user experience.

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