On the Maximum Rate of Networked Computation in a Capacitated Network

ABSTRACT

A classical network application, e.g., search, that requires assimilation of *source* data available at various servers to generate the desired output at a particular server, called the *sink*. Such an application requires the data to be transmitted over the network of communication links connecting the servers and computation of a function of this data. *In-network computation* enables the computation of partial functions of the data on intermediate servers; this situation is also studied for other network applications like query processing on a network, and information processing in sensor network.

EXISTING SYSTEM

In Existing System, We are given a capacitated communication network and several infinite sequences of source data each of which is available at some node in the network. A function of the source data is to be computed in the network and made available at a sink node that is also on the network. The schema to compute the function is given as a directed acyclic raph (DAG). Here we consider the problem of finding the communication and in-network computation *schedule* of a given arbitrary function of distributed data so as to maximize the *rate* of computation.

DIS ADVANTAGES

- It maximizes the computation rate.
- Accounting of data symbols in routing-computing scheme significantly difficult.

PROPOSED SYSTEM

In Proposed System, We want to generate a computation and communication schedule in the network to maximize the rate of computation of the function for an arbitrary function (represented by DAG). We first analyze the complexity of finding the rate maximizing schedule for the general DAG. We show that finding an optimal schedule is equivalent to solving a packing linear program (LP). We then prove that finding the maximum rate is MAX SNP-hard

(by analyzing this packing LP) even when the DAG has bounded degree, bounded edge weights and the network has three vertices. We then consider special cases arising in practical situations. First, a polynomial time algorithm for the network with two vertices is presented. This algorithm is a reduction to a version of a sub modular function minimization problem. Next, for the general network we describe a restricted class of schedules and its equivalent packing LP.

ADVANTAGES

- Reduce the time (or cost, the number of transmissions) to get the final function value at the *sink*.
- It is reduction to a version of a submodular function minimization problem.

SYSTEM REQUIREMENTS

H/W System Configuration:-

Processor	-	Pentium –III
RAM	-	256 MB (min)
Hard Disk	-	20 GB
Key Board	-	Standard Windows Keyboard
Mouse	-	Two or Three Button Mouse
Monitor	-	SVGA

S/W System Configuration:-

Operating System	:	Windows95/98/2000/XP
Application Server	:	Tomcat5.0/6.X
Front End	:	HTML, Jsp
Scripts	:	JavaScript.
Server side Script	:	Java Server Pages.

Database : MySQL 5.0

Database Connectivity : JDBC