

IEEE JSAC: Call for Papers

Special Issue on

In-Network Computation: Exploring the Fundamental Limits

Over the last several years, many strands of research that can be classified as *in-network computation* (or *distributed computation of functions of distributed data*) have emerged. One strand has concentrated on communication complexity, while a second strand takes the information theoretic view with correlated sources. A third strand, motivated by wireless sensor networks has considered the rate of computing a function over large multihop wireless networks. Then there is network coding research that also bring in the flavor of “networks for computation.” Randomized algorithms and approximate computation are also being explored. Clearly, these strands intersect varied disciplines—source coding and network coding, random networks, and algorithms and associated complexity theory (time, space and communication). The objective of this special issue is to provide a platform to bring together the above strands and other emerging paradigms of research in this area and thereby provide further impetus to research on this class of problems. We solicit original papers and tutorial surveys on the following list of indicative topics.

- Functions of correlated sources
- Computing functions over broadcast networks
- Computing functions over multihop wireless & wireline networks
- Approximate and PAC computation of functions
- Randomized algorithms for in-network-computation
- Distributed source & network coding for functions
- Communication complexity for functions of two or variables
- Gossip type algorithms for function computing
- Fault tolerant in-network computing
- Special purpose networks for specific functions

As usual, the above is not an exhaustive list but an indicative one.

Submission Process

Prospective authors should submit a pdf version of their complete manuscript via EDAS paper submission link. (See <http://edas.info>) . See <http://edas.info/doc/authors.html> for information about the paper upload process. Formatting should follow the IEEE J-SAC guidelines; see <http://www.jsac.ucsd.edu/Guidelines/info.html> or “Information for Authors” on the inside back cover of any J-SAC issue). The format of final manuscript, page charges, and all other issues will strictly follow the IEEE JSAC regulations. Prior to submitting their papers for review, authors should make sure that they understand and agree to adhere to the over-length page charge policy presented in the JSAC guidelines. The timetable for the special issue is as follows.

Timetable

Manuscript submission	Mar 01 2012
First round of reviews	Aug 25 2012
Submission of revisions	Sep 25 2012
Acceptance notification	Oct 25 2012
Final manuscript due	Nov 15 2012
Publication date	Second Quarter 2013

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