

The Workshop on Fundamental Research in Networking

Airlie House, April 24-25, 2003

Scope

Since the establishment of a networking research program at the NSF in 1987, three NSF sponsored workshops have addressed fundamental research in networking. Since the last of these workshops, held in 1994, both the networking research community and its research agenda have rapidly evolved.

Two trends strongly motivate the organization of a new workshop: the significantly broadening of the scope of networking research and the dramatic growth of the network research community. The range of topics of proposals in the networking area is continuously broadening, and now includes, among many other new topics, wireless sensor networks, ubiquitous computing, peer-to-peer networks, optical networks, network security, Internet measurements, control theory applications in networking, and cross-layer optimizations. At this time, there is hardly a researcher in computer science or electrical engineering, who does not, directly or indirectly, include networking aspects in his/her research agenda. The central role of network research in computer science and engineering has led to a significant growth of the research community.

A need for a new workshop also arises from a growing sense that, due to the broadening of the scope of network research and the growth of the community, fundamental network research at the NSF is currently being shortchanged. For example, the number of proposals submitted to networking research in 2002 has doubled, as compared to the previous year, with a tendency of further increase, but the research budget has not experienced the same pace of increase. At the same time, industry and mission-oriented government agencies have broadly reduced, if not entirely eliminated, basic networking research from their agendas. There is a rising need to better understand how to improve the ability of NSF to foster visionary and far-reaching research in networking.

This workshop will prepare a report that will be available to the community and can help to better articulate the future research agenda in networking; it will stimulate far-reaching future research initiatives, collaborations and involvement of the community. The workshop will identify major issues affecting fundamental research in networking for the future. Tentative goals and discussion points include, but are not limited to: revisit the issues related to fundamental networking research; revisit the importance of networking research in the context of rapid changes in technologies and science. What are the research methodologies? How to deal with the issues of areas that are overlooked/overemphasized? How to strengthen the networking research program within

NSF? What are the current, short-term and long-term needs, and how do you distinguish among them? How can the community evolve? How can the vision of the community be best articulated?

Organizing Committee:

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