Position Statement of Sushil K. Prasad  
Candidate for TCPP Chair

I have been involved with Parallel Processing research and education over the last two decades as student, educator and volunteer, and have seen its amazing growth to the extent that today this technology permeates the society at large. Even the home computers boast of multi-core CPUs and high-performance GPUs! Parallel processing now is a routine enabling technology for drug discovery, stock market analysis, and simulation and gaming, not just the traditional science and engineering applications. Such increasingly interdisciplinary nature of research and inroads into the mass market opens up new opportunities and poses new challenges. In this new exciting era, TCPP will need to take a worldwide leadership role, be conduit for quality information exchange among various stake holders, help set standards in curriculum, programming, and research, and actively promote parallel processing research, education, and practice.

I will be honored to serve as the TCPP chair and sincerely ask for your vote and continued support. By being involved over a long span with the community but not too entrenched with TCPP, I hope to bring in fresh perspectives and out-of-the-box solutions. If elected, I will focus on substantially increasing the level of community participation through a series of new initiatives and by invigorating current activities, on creating new level of synergy with sister technical committees and related organizations, and on ensuring quality and vitality of various sponsored conferences.

My main thrust will be to energize the community and foster vigorous participation at all levels and of all segments by (i) creating new value, dynamic resources, and service and other opportunities for students, young professionals and international members, (ii) by drawing industry members into various activities related to conferences, resources, news and award sponsorships, and (iii) by engaging senior members from academia and industry in defining standards and creating roadmaps for research and practice. TCPP needs to become the resource central for all aspects of parallel processing and allied technologies as well as for their application to relevant interdisciplinary domains. In particular, students and young members need a scholarpedia like curated living site to refer to up-to-date technical information, standards, tutorials and lecture notes, a user supported site for posting and finding open source parallel software/tools and to post links and publicize their own projects, annotated bibliographies, theses, and publications, a site for finding and posting announcements for jobs, scholarships and CFPs, and a forum to carry out discussions. In this new era, TCPP needs to put special emphasis on internationally promoting parallel processing research and education, sponsorship of conferences, and adoption by industry and research labs, with a focus on rapidly developing economies.

The success of parallel processing and its related technologies naturally has led to growth of several sister IEEE technical committees and other organizations, a clear sign of the vibrancy of our broader community. Coordinated effort is needed, however, to minimize duplication of effort or proliferation of unsustainable conferences and other activities. TCPP and its sister entities can complement and leverage off each other in creating new shared resources, technical and educational standards, and research roadmaps. I will be keenly working with my colleagues to foster the needed synergy and to further promote joint sponsorships of conferences aiming for quality and sustainability. We could explore if our overall area is ripe for upgrading to a joint IEEE technical council resulting in a much higher level of clout and synergy for our community.

Finally, as some of you know, IEEE Computer Society has been loosing about ten thousand dollars each day as overall conference attendances and net income have stagnated despite 75% growth in the number of conferences. Therefore, IEEE-CS is undergoing major fiscal policy restructuring this year. I will diligently work with IEEE-CSs and with the organizers of TCPP-sponsored conferences through this challenging transition period to ensure vigorous activities as well as financial vitality across the board.
Biography

Sushil K. Prasad (BTech ’85 IIT Kharagpur, MS ’86 Washington State, Pullman; PhD ’90 Central Florida, Orlando - all in Computer Science/Engineering) is a Professor of Computer Science at Georgia State University (GSU) and Director of GSU-GEDC Distributed and Mobile Systems (DiMoS) Lab hosted at Georgia Institute of Technology, Atlanta. He has carried out theoretical as well as experimental research in parallel and distributed computing, resulting in 80+ refereed publications, several patent applications, and about $1M in external research funds as PI and over $4M overall (NSF/NIH/GRA/Industry). Recently, Sushil successfully led a multi-year, Georgia Research Alliance (GRA) funded interdisciplinary research project with seven GSU faculty, three Georgia Tech faculty, and over two dozen students on developing SyD middleware for collaborative distributed computing over heterogeneous mobile devices, resulting in several patents, dissertations, and publications. As a result of this exemplary inter-institutional collaboration, Georgia Tech/GRA continues to provide laboratory space and infrastructure for Sushil’s DiMoS laboratory and a second research office. Sushil’s current research interests are Parallel Algorithms and Data Structures, Parallel Discrete Event Simulation, Web-based Distributed and Collaborative Computing, Middleware and Collaborative Applications for Handheld Devices, and Bio-computing.

Sushil has been very active in the professional community, serving on the organization of top conferences, on NSF and other review panels, on advisory committees of conferences and State of Georgia funding agency Yamacraw, and carrying out editorial activities of conference proceedings and journal special issues. Over the recent years, he has been drawn into major professional service roles at several international parallel processing and related conferences, including serving as Proceedings Chair for HiPC continuously for the last five years, as Tutorial Chair of IPDPS for last two years (07-08), and as program committee member for numerous conferences (IPDPS’05-07; CC-Grid’07; HP-GRID/IPDPS’07, ICDCN’06, HPCS’06, ICA3PP’04-05, HiPC’04, etc.).

To ensure that HiPC student attendees in India, who typically pay little registration fees and hence did not get the proceedings, get access to the accepted papers, Sushil has successfully negotiated with Springer for each of the last three years to procure CDROM versions of proceedings almost at cost. He also took up restarting the symposium tutorial session at IPDPS’07 after a break of several years – he was able to solicit and attract several high quality tutorial proposals, and helped select an interdisciplinary tutorial on High-performance Computing Methods for Computational Genomics delivered by experts on the topic, Profs. Aluru, Bader, and Kalyanaraman. Sushil is also actively fostering other interdisciplinary research activities – for example, he is the founding Program Co-Chair of IEEE Intl. Workshop on Service Oriented Technologies for Biological Databases and Tools in conjunction with ICWS 2007 (along with Prof. Navathe of Georgia Tech and Prof. Bourne of UC, San Diego).

Sushil has received invitations for talks from a variety of organizations nationally and internationally (e.g., National Research Council, Canada, 2006) and for funded research visits internationally (University of Melbourne and NICTA, Australia, 2006; University of New Brunswick, Canada, 2005). Last month, he was conferred an Honorary Adjunct Professorship at University of New Brunswick, Canada, for his collaborative research on ACENET project to establish high performance computing infrastructures in Atlantic Canada.

At GSU, Sushil has been instrumental in taking a small CS program within Math dept. to now a Ph.D.- granting stand-alone CS dept. He served as the founding Graduate Program Director for the newly created CS dept. in 2000. To give the new dept and the Ph.D. program a sound footing, Sushil undertook several other major service roles at College and University level, including its graduate council, curriculum committee, and chairing GSU’s By-Laws committee. In addition, Sushil single-handedly initiated and propelled research in parallel and distributed computing at GSU throughout 90s, helped procure research and equipment funding, and setup and manage high-performance computing infrastructure, developed senior and graduate level courses, and, based on these, helped build the CS program by attracting additional faculty members in Parallel Processing and allied areas.

Sushil’s home page is at www.cs.gsu.edu/~cscskp.