1 Conference organization

A conference begins with the formation of a steering committee. The steering committee ratifies the major decisions regarding the conference, such as its time and location, and selects a general chair. The general chair proposes potential dates and locations, directs the surrounding discussion, and selects other conference administrators. These positions include the treasurer, who manages finances; the secretary, who manages paper and talk submissions and the conference proceedings; the local arrangements chair, who runs on site organization; and the program chair, who directs the program committee.

2 Program committee

The program committee decides which papers to include in the conference. The program chair is assigned to head the program committee, and he or she selects the rest of the committee members. The selection must balance different disciplines, seniority, the academia/industry divide, and the geography of members’ home institutions. The program chair also constructs the conference program, compiling the accepted papers to create coherent sessions.

3 How does the program committee operate?

The program chair collects submissions and distributes them to the rest of the committee. Typically, three to five members review each paper, commenting on the work and assigning two numerical scores. In one system, one score measures the reviewer’s opinion of the submission, generally on a 0–10 scale, and the second measures the reviewer’s confidence in their opinion, generally on a 0–3 scale. (Some conferences allow negative scores, using 0 as a neutral score.) Once all reviewers have submitted scores, software aggregates the scores and normalizes for bias and confidence, and the full committee meets to discuss the submissions. Usually, a few papers will stand out as clear accepts, and several papers will fall out as clear rejects. These decisions generally come from a quick consensus, but the battle begins over the remaining papers. In some cases, in order to decide about a paper, additional program committee members read it.

Reviewers evaluate the written submissions not only as papers, but for their potential to make a good talk. Papers must be appropriate for the conference, as demonstrated in Tom’s anecdote about a submission regarding VLSI I/O pads to the Workshop on I/O in Parallel and Distributed Systems (IOPADS). Sometimes two papers warrant acceptance but are too similar to justify separate papers; in these cases the authors are asked to merge their work for a joint paper. Conference papers generally receive one shot at submission, unlike journal submissions, although rebuttal periods are growing more common.
4 Judging papers

By what criteria do the reviewers judge a paper? A paper must present original work, although most submissions are merely extensions of prior efforts. Zobel notes that these incremental papers must be perfect to be accepted, but truly groundbreaking achievements are allowed small imperfections. Unfortunately, well written papers may convey their ideas almost too well, to the point that a reviewer may find the conclusions obvious after an excellent discussion.

Papers must demonstrate valid work—are the ideas presented sound? The results must be verifiable by the greater technical community, whether by proof, analysis, modeling and simulations, or experiment. Even the bibliography must support the paper’s validity, as few citations, unrelated citations, or an unusually large number of self citations indicate that the work is not well grounded in the literature. Even a well written paper cannot excuse unverifiable results.

Papers at the borderline of these criteria should be returned for revision and resubmission only if this request is reasonable. If a paper requires an excessively substantial amount of reworking to make it suitable, it should be rejected.

5 Referee report

The reviewer must report his or her assessment of the paper to both the program chair and the authors of the submission. For the program chair, the reviewer needs to support the recommendation to accept or reject the paper. Assertions of unoriginality must be adequately cited (else the IEEE stands to lose another member). For the author, the reviewer should recommend revisions if he or she voted to accept the paper, and provide honest criticism if he or she voted to reject it. The reviewer should suggest improvements and focus on constructive criticism, not seek to find flaws where none exist.