AAAI–91 Technical Program

AAAI-91 is the ninth national conference. The purpose of the conference is to promote research of the highest caliber in artificial intelligence (AI) and to promote scientific interchange among AI researchers and practitioners. Papers may represent significant contributions to (a) the state of the art in AI practice or (b) the development of computational principles underlying cognition and perception in man and machine. The list of content areas has been revised for the 1991 conference. Several new content areas have been introduced to emphasize what were previously subareas (e.g., distributed problem solving, enabling technology and systems, mathematical foundations, and planning, scheduling, and reasoning about action). In addition, certain content areas from previous years have been either renamed or eliminated and their subareas redistributed to facilitate categorization and balance the distribution of papers among content areas. Note that case-based reasoning has been categorized under knowledge-based systems. In the case of papers with an applications orientation, particular attention will be given to those that present an in-depth analysis of experience with AI techniques in substantial applications, especially if the authors are able to characterize the properties of the problem domain that enable the application of those techniques.

• Automated Reasoning

Automatic programming, probabilistic reasoning, theorem-proving, constraint satisfaction, search algorithms.

• Cognitive Modeling

Studies of human problem solving and information processing; simulation models of cognition, sensing, or perception.

• Distributed Problem Solving

Distributed resource allocation, communication, negotiation, coordination and cooperation in multi-agent systems.

•Education

Tutoring systems, computer aided instruction.

• Enabling Technology and Systems

Machine architectures, computer languages, systems integration, truth maintenance systems, rule-based systems.

• General Knowledge Representation

Default reasoning, causal and temporal reasoning, inheritance, spatial reasoning, design, diagnosis, knowledge and belief.

• Knowledge-Based Systems

Expert system design, knowledge acquisition techniques, legal reasoning systems, case-based reasoning.

• Machine Learning

Inductive learning, speedup learning, knowledge-intensive learning, clustering, discovery, classification, integrated learning systems.

• Mathematical Foundations

Formal techniques of utility to a wide variety of AI problems, and mathematical analysis of formal systems including nonmonotonic and nonstandard logics, algebraic systems, and probabilistic theories.

• Natural Language

Generation and understanding; syntax, semantics, speech, discourse, and representation issues.

• *Perception and Signal Understanding*

Vision, sensor interpretation, speech recognition.

• Planning, Scheduling, and Reasoning About Action

Resource management, task scheduling, planning and search, planning and temporal reasoning, agent architectures.

• Reasoning About Physical Systems

Applications of causal, temporal, qualitative, and spatial reasoning to engineering, scientific, or medical problems, including diagnosis, design, and monitoring.

• Robotics and Control

Hardware issues, sensor-motor systems, path planning, kinematics. grasp planning, error detection and recovery, force planning,

• User Interfaces

Graphical interfaces, natural language front ends, multimedia issues, artificial reality.

Requirements for Submission

Timetable—Authors must submit six (6) complete copies of their papers (hard copy only, we cannot accept computer files) to the AAAI office by January 30, 1991. Papers received after this date will be returned unopened. Notification of receipt will be mailed to the first author (or designated author) soon after receipt. All inquiries regarding lost papers must be made by February 8, 1991. Notification of acceptance or rejection will be mailed to the first author (or designated author) by March 8, 1991. Camera-ready copy of accepted papers will be due approximately one month later.

Paper Format for Review

Each copy of the paper should be clearly legible. Good quality print is required. (Dot-matrix printout is not acceptable unless truly of letter quality.) Papers should be single-spaced and printed using 12 point type (10 characters/inch for typewriters). On each page of the paper, the text (including figures, tables, and diagrams, but excluding headers and footers) should fit in an area 5.5″ by 7.5″. (The LaTeX article style with 12 point type, conforms to these requirements.)

Length

Authors must restrict the body of their papers to 11 pages, including figures, tables, and diagrams, but not including the bibliography.

Title page

Each copy of the paper must have a title page (separate from the body of the paper) containing the title of the paper, the names and addresses of all authors, and a short (less than 200 word) abstract. The title page must specify exactly one topic from the above list of topics (as well as a subtopic, if applicable) as the main topic of the paper. This information helps determine which members of the program committee review each paper. A secondary topic or group of topics may also be given to further characterize the content of the paper.

Submissions to Multiple Conferences

Papers that are also being submitted to other conferences, whether verbatim or in essence, must have this fact clearly stated on the title page. With the exception of workshops with a specialized focus, papers that appear at other conferences must be withdrawn from AAAI-91. Failure to meet any of the requirements above is grounds for summary rejection, without refereeing.

Review Criteria

Each paper will be stringently reviewed by experts in the area specified as the topic of the paper. Reviewers will evaluate papers along four broad dimensions: significance, originality, validity, and clarity. Questions that will appear on the review form have been reproduced below. Authors should bear these questions in mind while writing their papers and use them to evaluate their submission:

Significance: How important is the work reported? Does it attack an important/difficult problem or a peripheral/simple one? Does the approach offered advance the state of the art?

Originality: Has this or similar work been previously reported? Are the problems and approaches completely new? Is this a novel combination of familiar techniques? Does the paper point out differences with related research? Is it re-inventing the wheel using new terminology?

Quality: Is the paper technically sound? Does it carefully evaluate the strengths and limitations of its contribution? How are its claims backed up?

Clarity: Is the paper clearly written? Does it motivate the research? Does it describe the inputs, outputs and basic algorithms employed? Does the paper describe previous work? Are the results described and evaluated? Is the paper organized in a logical fashion?

Publication

Accepted papers will be allocated six (6) pages in the conference proceedings. Up to two (2) additional pages may be used at a cost to the authors of $250 per additional page. Papers exceeding eight pages and those violating the instructions to authors will not be included in the proceedings.

Copyright

Authors will be required to transfer copyright of their paper to AAAI.

Please send papers and conference registration inquiries to:

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Menlo Park, CA 94025-3496.

Registration and call clarification inquiries (ONLY) may be sent to the CSNET address: NCAI@aaai.org

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