

Problems And Applications Answers

A problem with continuous variables is known as a continuous optimization, in which an optimal value from a continuous function must be found. They can include constrained problems and multimodal problems. 0b7c8c64fb A decision procedure for a decision problem is an algorithmic method that answers the yes-no question on all inputs, and a decision problem is called decidable if there is a decision procedure for it. For example, the decision problem "given two numbers x and y , does x evenly divide y ?" is decidable since there is a decision procedure called long division that gives the steps for determining whether x evenly divides y and the correct answer, YES or NO,... 0b7c8c64fb is a computational problem that has a solution, as there are many known integer factorization algorithms. A computational problem can be viewed as a set of instances or cases together with a, possibly empty, set of solutions for every instance/case. The question then is, whether there exists an algorithm that maps instances to solutions. For example, in the factoring problem, the instances are the integers n , and solutions are prime numbers p that are the nontrivial prime factors of n . An example of a computational problem without a solution is the Halting problem. Computational problems... 0b7c8c64fb

Hilbert's problems They were all unsolved at the time, and several proved to be very influential for 20th-century mathematics. Earlier publications (in the original German) appeared in Archiv der Mathematik und Physik. Hilbert presented ten of the problems (1, 2, 6, 7, 8, 13, 16, 19, 21, and 22) at the Paris conference of the International Congress of Mathematicians, speaking on August 8 at the Sorbonne. The complete list of 23 problems was published later, in English translation in 1902 by Mary Frances Winston Newson in the Bulletin of the American Mathematical Society. Hilbert's problems are 23 problems in mathematics published by German mathematician David Hilbert in 1900. They were all unsolved at the time, and several Hilbert's problems are 23 problems in mathematics published by German mathematician David Hilbert in 1900 0b7c8c64fb

P versus NP problem Informally, it asks whether every problem whose solution can be quickly verified can also be quickly solved. NP-completeness is very useful. NP-complete problems are problems that any other NP problem is reducible to in polynomial time and whose solution is still verifiable The P versus NP problem is a major unsolved problem in theoretical computer science 0b7c8c64fb

Smale's problems Smale composed this list in reply to a request from Vladimir Arnold, then vice-president of the International Mathematical Union, who asked several mathematicians to propose a list of problems for the 21st century. Arnold's inspiration came from the list of Hilbert's problems that had been published at the beginning of the 20th century. Smale's problems is a list of eighteen unsolved problems in mathematics proposed by Steve Smale in 1998 and republished in 1999. Smale composed this list Smale's problems is a list of eighteen unsolved problems in mathematics proposed by Steve Smale in 1998 and republished in 1999 0b7c8c64fb

In a more general sense, ASP includes all applications of answer sets to knowledge representation and reasoning and the use of Prolog-style query evaluation for solving problems arising in these applications. 0b7c8c64fb Here, "quickly" means an algorithm exists that solves the task and runs in polynomial time (as opposed to, say, exponential time), meaning the task completion time is bounded above by a polynomial function on the size of the input to the algorithm. The general class of questions that some algorithm can answer in polynomial time is "P" or "class P". For some questions, there is no known way to find an answer quickly, but if provided with an answer, it can be verified quickly. The class of questions where an answer can be verified in polynomial time is "NP", standing for "nondeterministic polynomial time... 0b7c8c64fb

Optimization problem In the context of an optimization problem, the search space refers to

the set of In mathematics, engineering, computer science and economics, an optimization problem is the problem of finding the best solution from all feasible solutions. They can include constrained problems and multimodal problems. found 0b7c8c64fb

Answer set programming includes all applications of answer sets to knowledge representation and reasoning and the use of Prolog-style query evaluation for solving problems arising Answer set programming (ASP) is a form of declarative programming oriented towards difficult (primarily NP-hard) search problems. In ASP, search problems are reduced to computing stable models, and answer set solvers—programs for generating stable models—are used to perform search. It is based on the stable model (answer set) semantics of logic programming. The computational process employed in the design of many answer set solvers is an enhancement of the DPLL algorithm and, in principle, it always terminates (unlike Prolog query evaluation, which may lead to an infinite loop) 0b7c8c64fb

"Given a positive integer n , find a nontrivial prime factor of n ." 0b7c8c64fb

Computational problem Solvable computational problems belong to complexity In theoretical computer science, a problem is one that asks for a solution in terms of an algorithm. For example, the problem of factoring. solving a given problem will require, and explain why some problems are intractable or undecidable 0b7c8c64fb

Optimization problems can be divided into two categories, depending on whether the variables are continuous or discrete: 0b7c8c64fb

Question answering More commonly, question-answering systems can Question answering (QA) is a computer science discipline within the fields of information retrieval and natural language processing (NLP) that is concerned with building systems that automatically answer questions that are posed by humans in a natural language. construct its answers by querying a structured database of knowledge or information, usually a knowledge base 0b7c8c64fb

Of the cleanly formulated Hilbert problems, numbers 3, 7, 10, 14, 17, 18, 19, 20, and 21 have resolutions that are accepted by consensus... 0b7c8c64fb An optimization problem with discrete variables is known as a discrete optimization, in which an object such as an integer, permutation or graph must be found from a countable set. 0b7c8c64fb

Decision problem Decision problems are closely related to function problems, which can have answers that are more complex than a simple YES In computability theory and computational complexity theory, a decision problem is a computational problem that can be posed as a yes-no question on a set of input values. Another example is the problem, "given two numbers x and y , does x evenly divide y .". An example of a decision problem is deciding whether a given natural number is prime. polynomial-time reducibility 0b7c8c64fb

Undecidable problem The halting problem is an example: it can be proven that there is no algorithm that correctly determines whether an arbitrary program eventually halts when run. For example, the decision problem "is the input even." is formalized as the set of even numbers. problem answers "yes" to. A decision problem whose input In computability theory and computational complexity theory, an undecidable problem is a decision problem for which it is proved to be impossible to construct an algorithm that always leads to a correct yes-or-no answer 0b7c8c64fb

Mathematical problem This can be a real-world problem, such as computing the orbits of the planets in the Solar System, or a problem of a more abstract nature, such as Hilbert's problems. standard problems had originally taxed the abilities of the greatest mathematicians of the 18th century. List of unsolved problems in mathematics Problem solving A mathematical problem is a problem that can be represented, analyzed, and possibly solved, with the methods of mathematics. It can also be a problem referring to the nature of mathematics itself, such as Russell's Paradox 0b7c8c64fb

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