Research Review - Planning Historical Developments

In this review, three important historical developments in the field of AI planning and search are reviewed, highlighting the relationships between their developments and their impact on the field of AI.

STRIPS: **St**anford **R**esearch **I**nstitute **P**roblem **S**olver was an automated planner created by Richard Fikes and Nils Nilsson in 1971. STRIPS was also the formal language of the inputs of the planner. The language was remarkable important because it was the base of a large quantity of languages, usually called action languages, created for expressing automated planning programs[3][4].

General Problem Solver: The General Problem Solver(GPS), was developed in 1957 by Alan Newell and Herbert Simons. The goal of GPS was the creation of a computer program that could solve any type of problem by means of a suitable description of them. The GPS was an important for IA, because it was the first program that separated the problem solving strategy form the knowledge of particular problems. The algorithm was not tied to a particular domain. The GPS was not been able to accomplish its goals, because it didn't consider the existence of NP-Hard Problems, where the computing of a solution alone take time exponential to its input[1].

WARPLAN: It was the first planner to be written using logic programming. The WARPLAN was written in Prolog using only 100 lines, smaller than the other planners available at the time, and capable of solving optimally the Sussman anomaly, a problem in artificial intelligence identified by Gerald Sussman, in 1975[2]. The use of logic programming showed that a remarkable economy in lines of code could be achieve using the paradigm[1][3].

References

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[3] Russell, Stuart J.; Norvig, Peter (2003), Artificial Intelligence: A Modern Approach (3nd ed.)

[4] Fikes, R.E. and Nilsson, N.J., 1971. STRIPS: A new approach to the application of theorem proving to problem solving. Artificial intelligence, 2(3-4), pp.189-208. Vancouver