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AI Planning and Search – Research Review
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There are many kinds of researches going on in the field of Artificial Intelligence. One of those topics is planning and search or also known as automated-planning. The advancements in this fields can be the difference for an AI system to be able to truly be considered a system with intelligence. Creating a system that has the ability to process the information presented to it and make decisions based upon the information is considered as one of many challenging areas of research in AI. One of the motivations for advancements ins automated-planning is because planning is a very important aspect of rational behavior and for a system to grasp the computations aspects of intelligence then planning plays a critical role. [1] Another motivation is that plans are needed for almost every aspect of life and subconsciously humans are always making plans whether we are want to or not. So, an AI system needs to have the ability to make plans automatically. [1]

There have been many developments in the field of AI planning and search. A very important and crucial development was the development of the Shakey robot at the Stanford Research Institute (SRI) from 1966 to 1972. Shakey is a mobile robot, with many cameras and sensors that were controlled by a computer. It used many different techniques like computer vision, language processing, and planning to understand instructions. [2] Shakey was the first robot to "reason about its actions." [2] The search algorithm used in the robot is still used to this day. The researchers at SRI developed a sophisticated search algorithm called A*, which is still used to this day. For example, I used A* search to solve the Pacman problem earlier in the course.

Another very crucial development from the Shakey robot was the advancement of action planning languages. The action language used in Shakey was called STRIPS, which was developed by the SRI. STRIPS gave Shakey the ability to analyze the end goals and create a plan based on them. STRIPS was the first action planning language and it was very good first take on representing a problem. But like everything there is always room for improvement. The next major development because of STRIPS was ADL (Action Description Language) which was an extension of STRIPS. What ADL better then STRIPS was that it removed some of the constraints, which gave it the ability of handle problems that were more realistic. ADL did this by "not assuming unmentioned literals as false, but as unknown". [3] ADL was made better by the development of PDDL (Planning Domain Definition Language). PDDL was inspired by both STRIPS and ADL. PDDL tried to "standardize planning languages", by combining STRIPS, ADL and other representational languages. [3]

In conclusion, AI has many sub-topics of research that are very crucial to the advancement in making a system that truly is intelligent. One of those sub-topics is planning and search. There have been many crucial developments in this area, like development of Shakey, STRIPS, ADL and PDDL. And with every advancement that's made, we are one step closer to making a system that's intelligent.

Work Cited:

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