The Next Artificial Intelligence Revolution: AI Making Decisions without Human Models or Knowledge of Rules to Create Completely Independent Solutions

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Coding classes teach that all code has an “If, Then” statement. What if it is possible to create an AI that only requires an “If” statement and it is able to find the solution independent from any human input, or even knowledge of the rules? While many praise - or fear - A.I., its limits and capabilities have not yet been completely understood (MIT). This study also looks at ways that this school of thought of AI could be implemented in lucrative areas of innovations, including space exploration. A generational growth and decision-making AI was programmed within Python and Keras. Separately, Snake was installed to be tested by the AI. These two programs were unable to communicate by a process used in cybersecurity, therefore the AI was not able to view the backend code, or the rules, of the game. Further, no human models or clear objectives were given to the AI. Because the Snake test was successful, Chess was played with the same procedures. Despite the restrictions, the AI learned how to play the Snake game within 30 minutes. The best AI score was 843.5, while the human world record for the snake game is 103. The AI learned how to play Chess better than the Chessmaster Stockfish within 12 hours. The AI won 287 games, lost 103, and tied the rest 610 games. The input/output script of Python clearly displayed no backend communication. This study proves that AI can create solutions for itself without data or even transparent rules. The school of thought this research comes from could foster rover operations on planets researchers do not have exact properties for. Rather than preset potentially false AI base models, rendering the rover useless, this technology could have the rover make unique, complex solutions to environments it’s physically presented with.

Awards Won:
National Security Agency Research Directorate : Honorable Mention "Science of Security"
NASA: Second Award of $750