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A03 What Alphastar CANNOT do!

DeepMind created the AlphaStar AI program specifically to compete at expert levels in the real-time strategy game StarCraft II. AlphaStar has produced outstanding outcomes by defeating top human players across the globe. AlphaStar marks a tremendous progression for AI research and real-time strategy games but faces several constraints and obstacles. The understanding of AI system limitations plays a vital role in their continuous advancement and ensures their appropriate application across different fields.

AlphaStar displays superior data processing capabilities but fails to match the intuitive and creative elements that human players contribute during gameplay. AlphaStar's ability to develop new strategies and react swiftly to unforeseen scenarios is hindered by its dependence on existing data and human instruction.

The extensive training requirements and computational resources necessary to operate these AI systems present major obstacles to their broader application scalability. The necessity of performing millions of game simulations to reach proficiency levels proves impractical for numerous real-time applications which require swift learning capabilities and adaptability.

The performance metrics for AlphaStar create difficulties when attempting to compare its abilities directly to those of human players. The AI's enhanced control speed and precision over the game creates difficulties in assessing its genuine abilities and fairness when competing against humans.

ITAI-1370
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Ethical questions about AI's role in competitive gaming remain vital issues that demand attention. It is vital to maintain the game's integrity and spirit by preventing AI systems like AlphaStar from having unfair advantages over human players. Responsible AI deployment requires finding equilibrium between AI benefits and maintaining fairness and transparency.

The achievement of AlphaStar marks a major development in AI research yet addressing its limitations remains crucial for future progress. Understanding these obstacles enables researchers and developers to build AI systems that support human skillsets while delivering enhanced experiences and guaranteeing ethical operations in multiple fields.

References

1. https://www.lesswrong.com/posts/FpcgSoJDNNEZ4BQfj/the-unexpected-difficulty-of-comparing-alphastar-to-humans?form=MG0AV3
2. AlphaStar (software) - Wikipedia