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Speech Title: How Computers Can Learn like Humans

Speech Purpose: To give a general overview on artificial reinforcement learning and show its impact as it relates to a general audience

Speech Thesis: Artificial reinforcement learning is like teaching a computer in a way similar to how humans learn from trial and error, which means we can teach computers to do human tasks and be better than us at them.

Introduction

1. Attention material: Imagine teaching a child to ride a bike. They wobble, fall, get up, and try again until they finally get it right. Now, think of computers learning in a similar fashion, improving with every attempt until they perfect a skill.
2. Thesis: Just as we learn from our experiences and mistakes, artificial reinforcement learning enables computers to learn through trial and error, enhancing their capabilities.
3. Preview: Today, I'll unravel the basics of artificial reinforcement learning, delve into its real-world applications, and ponder the implications of machines surpassing human abilities.

*TRANSITION: Let's start by understanding what artificial reinforcement learning really is.*

Body

1. Understanding the Basics of Reinforcement Learning
   1. The Essence of Trial and Error
      1. Traditional learning vs. Reinforcement learning.
      2. The role of rewards and penalties in guiding learning.
   2. Key Components: Agent, Environment, Actions, and Rewards
      1. The agent (e.g., a robot or computer program) interacts with its environment.
      2. Feedback from these interactions helps refine future decisions.

*TRANSITION: Now that we grasp the basics, let’s see where this learning is applied in the real world.*

1. Real-world Applications of Reinforcement Learning
   1. Game Playing and Entertainment
      1. Computers mastering games like Go and Poker.
      2. Reinforcement learning in video game design and development.
   2. Practical Everyday Uses
      1. Automated financial trading.
      2. Smart power grids adjusting to consumption needs.

*TRANSITION: With these advancements, one can't help but ponder the broader implications.*

1. Implications of Machines Outperforming Humans
   1. Jobs and the Economy
      1. Potential for job displacement in certain sectors.
      2. New opportunities and industries emerging due to these technological advancements.
   2. Ethical and Moral Considerations
      1. Should there be limits to what we teach machines?
      2. Balancing the benefits of progress with potential societal impacts.

*TRANSITION: As we see, the frontier of artificial learning is vast and continually expanding.*

Conclusion

Summary statement: Through artificial reinforcement learning, we're not just advancing technology; we're redefining the boundaries of what machines can achieve, bringing them closer to human-like learning processes.

Concluding remarks: Just as a child learns to balance and pedal without toppling over, machines too are learning, evolving, and driving us into a future replete with possibilities and challenges.

References *(in APA style)*