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Sex With No Regrets: How Sexual Reproduction Uses a No Regret Learning Algorithm for Evolutionary Advantage

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## HIGHLIGHTS

- Sex implements a machine learning algorithm that more often than not grants it an evolutionary advantage over asexual reproduction.
- The algorithm reliably works even though each generation is a tiny sample of the full space of all possible genotypes.
- The sparseness of each generation's genotypes in the space of all genotypes is crucial for sex to gain an advantage.
- Computer simulations indicate that this is sufficient to give sex an evolutionary edge, even in stable and unchanging environments.
- Asexual populations rapidly reach a fitness plateau, but is eventually surpassed, with high probability, by the fitness levels of sexual populations.

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