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The Future of Life

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Life on Earth is a billions-of-years-old process that actively maintains information and structure in the face of the second thermodynamic law, perhaps the most fundamental in physics. The content of this worldwide multifold information structure life was dominated by biological evolution until recent centuries, when human intelligence, technology, and choices became a major effect. Crucial choices by humanity will largely determine what happens next, with the development and unfolding of new technologies. But life itself is also approaching a new phase, in which digital computation will start to rival and supplant biological computation, and in which intelligence will begin to engineer not just the outside world, but the biological world and the world of intelligence itself. What will come of this? It is exceedingly hard to predict, but basic physical and information theoretical limits, as well as extrapolation of current trends, provide some insights.