Can the 4th Industrial Revolution stop the 6th Mass Extinction

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Often described as the 'Goldilocks Planet' (not too hot, not too cold, just right), the earth has seen continued changes in climate that have been the primary cause of the five mass extinctions of life that have occurred in its history. Indeed, at a finer scale, the evolution of humankind and the origin and subsequent demise and disappearance of human civilizations have been inextricably linked to changes in climate, interspersed with odd catastrophes such as volcanoes, earthquakes and tsunamis. Some 700 thousand years ago in Antarctica, sea level was 10 to 15m higher than at present. Average temperatures were 2 to 3° higher than present and the ice shelf was significantly smaller in spatial extent than currently. The information on temperatures at the time was sourced from ice-cores which also show that at no stage did atmospheric concentrations of CO_2 ever exceed 400 ppm. Average global concentrations of CO_2 are now at some 421 ppm, suggesting that the sea level and temperature experienced in Antarctica (and more) is unequivocally on its way, it is just a question of when. In general terms, the current changes in climate have been directly linked to the start of the Industrial Revolution as various mechanisms were invented and operationalized that used fossil fuel as their energy source rather than human or horsepower. The use of fossil fuels in the last three centuries has seen emissions of greenhouse gasses at an almost unprecedented scale and the effect has been an almost unprecedented rate of change in climate. Looking forward, the prospects are grim. The nearly 75 loss of biodiversity since 1970 is likely to be further exacerbated by ongoing climate change and further direct impacts on humanity, including more intense weather disasters, expanded disease vectors, high probabilities of crop failures and more. Humanity is now staring down the barrel of the 6 mass extinction and not if, but simply when? Against this backdrop has been an even greater evolution of technology that is now being termed the '4^{th} industrial revolution'. The rate of technological change is beyond astounding and there are countless examples of technologies that are being used to arrest and recover environmental degradation and reductions in social welfare. Does the mushrooming of technology that is the 4^{th} industrial revolution, hold the promise of stopping the 6^{th} mass extinction? This is the question that will be considered in this paper.