

Bubbles, crises, and harms: the promises of GenAI

This paper examines the rise of GenAI in the context of the replication crisis and suggests we are creating substantial harms and ignoring obvious risks. The ‘replication crisis’, which largely began in psychology, largely concerns difficulties reproducing or replicating a scientific study (Ioannidis 2005; Fanelli 2009; Ritchie 2020). These problems are not restricted to psychology however, and some have suggested there could be similar problems in empirical computer science (Cockburn et al. 2020).

Meanwhile the now familiar cycle of AI hype is once again peaking, with media outlets describing an ‘AI bubble’ comparable with the dot.com ‘boom and bust’ of the 1990s and 2000s (BBC¹, Guardian²). This present bubble is largely driven by Generative artificial intelligence (GenAI) that relies on Large Language Models (LLMs), and attracts extensive funding as well as other resources (NY Times³). These complex models are said to ‘generate high-quality, human-like material’, and in so doing produce ‘previously unseen synthetic content, in any form and to support any task’ (García-Peñalvo & Vázquez-Ingelmo 2023).

Yet these grand expectations are tempered by reports of fabrication, hallucination (LaGrandeur 2024), and of ‘accuracy collapse beyond certain complexities’ (Shojaee et al. 2025). Alongside which are questions about the ‘black box’ nature of the models, a lack of transparency about methods and data, plus difficulty in establishing where and how failure occurs (Barassi 2024). Despite this, we see a rise in the use of GenAI across diverse sectors. There is, for example, enthusiasm for these technologies in spheres where risks to livelihoods are nevertheless high, such as in education (Lee and Low 2024), human resources (Nyberg et al. 2025), and the arts (Epstein 2023).

This paper addresses these issues by first drawing comparisons to the development of GenAI with the replication crisis in other disciplines. In so doing, the paper offers reasons to treat GenAI with significantly more scepticism, not only about its scope, but also regarding methodological validity, the foundations for the models, and the (training) data on which they rely. Next the paper examines case studies in contexts where there is considerable scope for harm, both direct and indirect, such as in contexts of mental health care (Solaiman 2024) and the arts (Jiang 2023). Finally, the paper argues that not only is GenAI found wanting practically, ethically and socially, it remains to be seen whether it even meets the criteria to be considered an ‘artificial intelligence’. With these arguments, the paper concludes that GenAI has multiple failures in definition, form, content, and application. Thus, if we want to make good use of these technologies, we need to do so with our eyes firmly open to their limitations.

Word count (not including bibliography): 495

¹ Faisal Islam and Oliver Smith (January 2026). AI boom will produce victors and carnage, tech boss warns. <https://www.bbc.com/news/articles/cr57p2ve8glo>

² Mark Surman (January 2026). The AI bubble will pop. It’s up to us to replace it responsibly. <https://www.theguardian.com/commentisfree/2026/jan/30/ai-bubble-mozilla>

³ Ben Casselman and Sydney Ember (November 2025). The A.I. Boom Is Driving the Economy. What Happens if It Falts? <https://www.nytimes.com/2025/11/22/business/the-ai-boom-economy.html>

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