It is commonly believed that quantum information is not lost in a black hole. Instead, it is encoded into non-local degrees of freedom in some clever way; like a quantum error-correcting code. In this talk, I will discuss how one may resolve some paradoxes in quantum gravity by using the theory of quantum error-correction. First, I will introduce a simple toy model of the AdS/CFT correspondence based on tensor networks and demonstrate that the correspondence between the AdS gravity and CFT is indeed a realization of quantum codes. I will then show that the butterfly effect/scrambling in black holes can be interpreted as non-local encoding of quantum information and can be quantitatively measured by out-of-time ordered correlations. Finally I will describe a simple decoding protocol for reconstructing a quantum state from the Hawking radiation and suggest a physical interpretation as a traversable wormhole in an AdS black hole. The decoding protocol also provides an attractive platform for laboratory experiments for measuring out-of-time ordered correlation functions as it clearly distinguishes unitary scrambling from non-unitary decoherence.