Abstract: Cosmological inflation remains one of the most promising theories to explain our observed universe. In the absence of primordial gravitational waves, the standard model of cosmology limits us to better understand the physics of inflation and possible embeddings in high energy physics. A very powerful discriminator of inflationary physics is a signature of primordial non-Gaussianity. However, so far, cosmological data is consistent with Gaussian initial conditions. While the cosmic microwave background (CMB) provides the most stringent bounds, its two dimensional nature restricts future improvements on primordial non-Gaussianity. For that reason we have started focussing on large scale structure (LSS), probing the full 3-dimensional past light cone of our Universe. Unfortunately tracers of the LSS are more non-linear and astrophysical and gravitational evolution source intrinsic non-Gaussianities, which results in both signal confusion and extra noise, hindering a detection of a potential primordial signal. I will discuss how machine learning could help solve some of these nuisances, either by 'Gaussianising' the observed fields or through direct (simulations based) inference. Finally, ML applications in cosmology are rapidly developing. We should remain cautious and apply common sense. I will discuss an example of what could happen if we don't.