

Overfitted mixture models are mixture models, where the number of components is larger than the true number of components. Rousseau and Mengersen (2011) [<https://doi.org/10.1111/j.1467-9868.2011.00781.x>] show that under a fairly general class of prior distributions the unnecessary components empty out asymptotically, meaning that their weights go to zero. Empirical studies suggest that a similar result might be true for deep mixture models even though the theory cannot be applied directly. The goal of this master thesis is to present the main result of Rousseau and Mengersen (2011) in a detailed manner and to discuss a possible extension to deep mixtures.