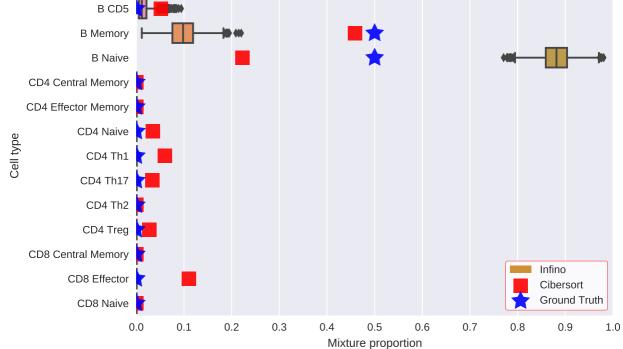Some raw samples are harder to deconvolve