

GPU Nested sampling

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BlackJAX is a Bayesian Inference library designed for ease of use, speed and modularity.

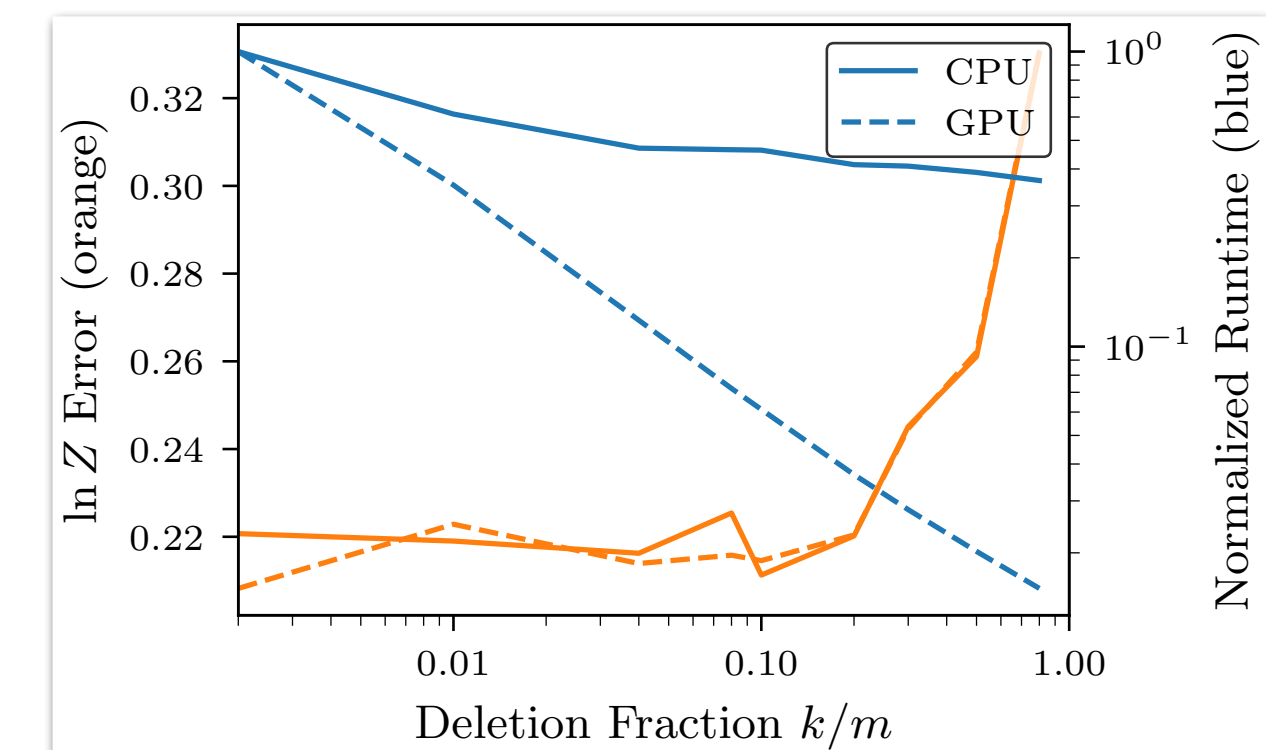
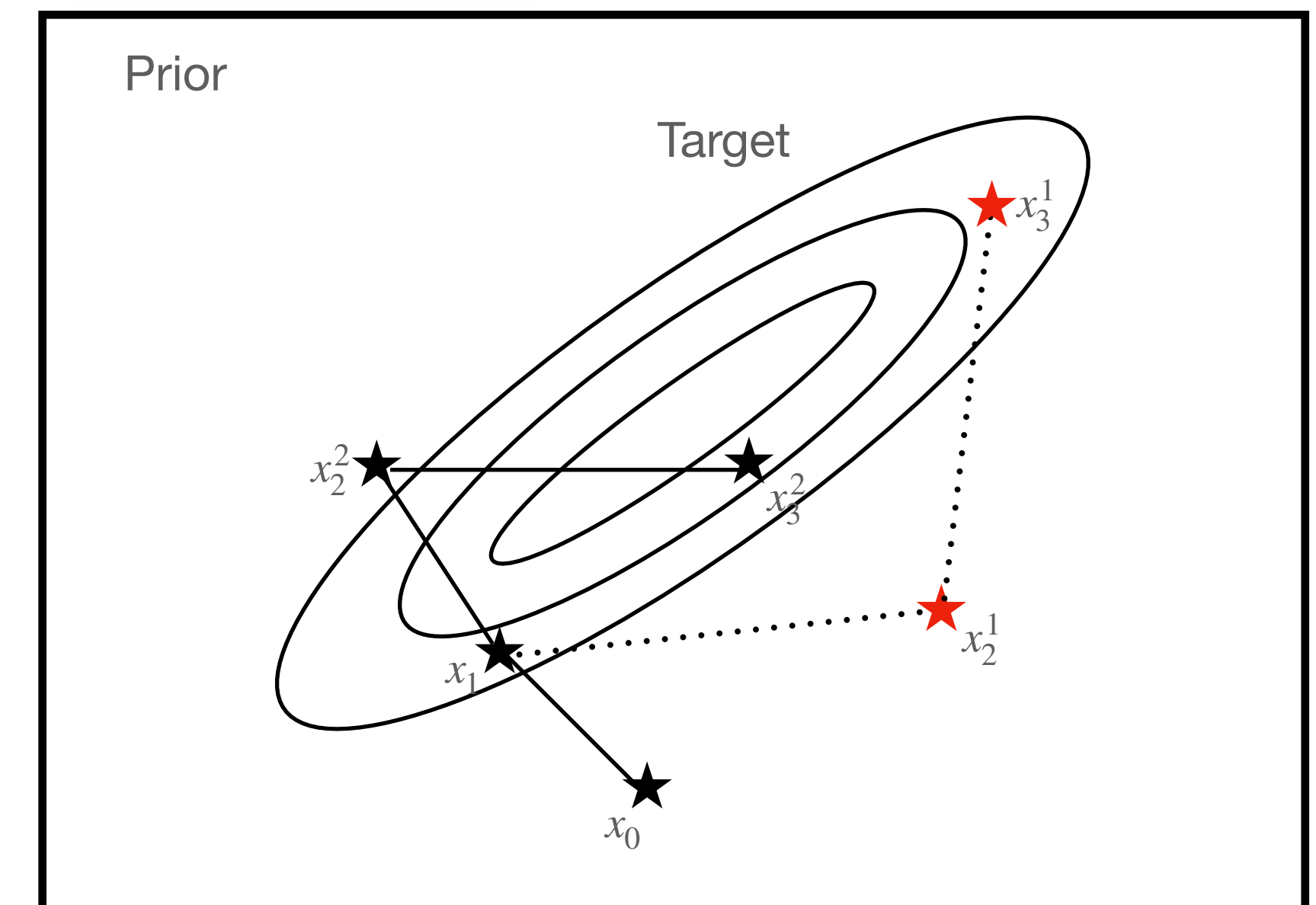
blackjax-devs.github.io/blackjax/

- Traditional inference methods (e.g. MCMC) historically designed for CPU computing
- GPU Native paradigms (e.g. Neural Simulation Based inference), coming to the fore
- Gap in performance of methods down to algorithmic improvement or just aligning to modern hardware?

**Put a State of the Art population MC method (Nested Sampling)
On a GPU and find out!**

ALGORITHM	RUNTIME (s)	ESS
BLACKJAX NSS	207	17490 (7599)
FLOWMC	742	13633
BILBY* (DYNESTY)	1×10^4	5130

Application to GW inference, see Metha Prathabans work



Vectorization speedup as percentage of population deleted