SBI Toolbox: Idea: recap

Bayesian approach to parameter estimation

$$p(\theta|X = x) = \frac{p(x|\theta)p(\theta)}{p(x)}$$

SBI Toolbox: Idea: recap

Bayesian approach to parameter estimation

$$p(\theta|X = x) = \frac{p(x|\theta)p(\theta)}{\int p(x, \theta)d\theta}$$

SBI Toolbox: Idea: recap

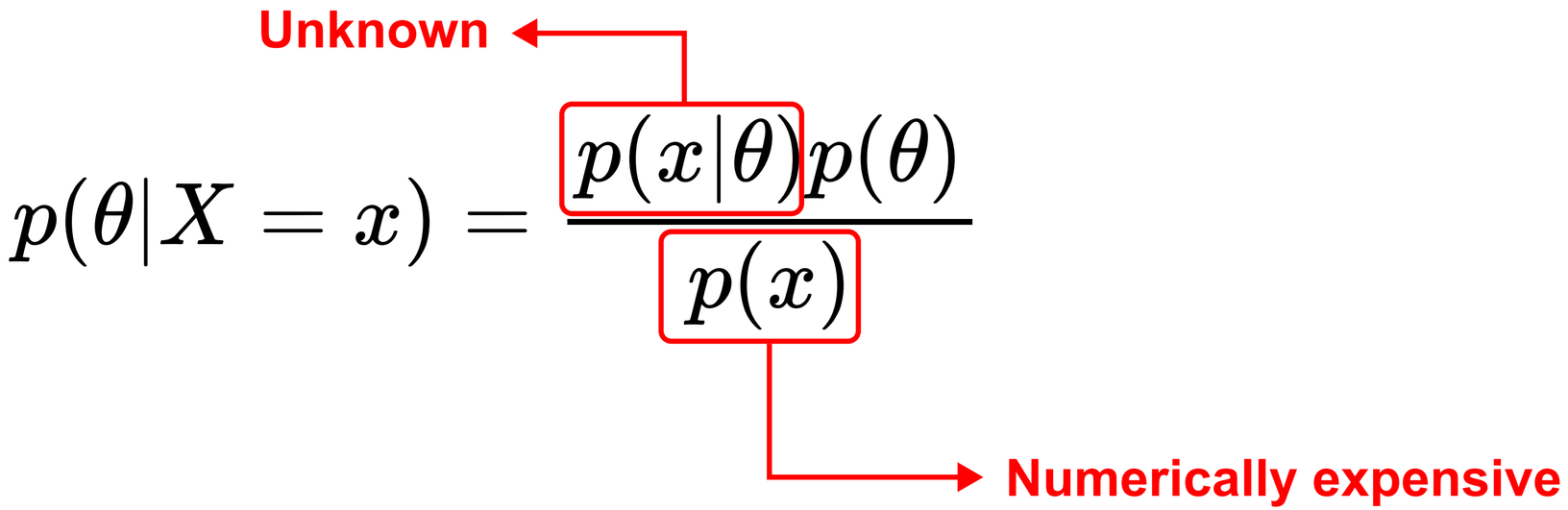
Bayesian approach to parameter estimation

$$p(\theta|X=x) = \frac{p(x|\theta)p(\theta)}{p(x)}$$

Numerically expensive

SBI Toolbox: Idea: recap

“Likelihood-free” approach to parameter estimation



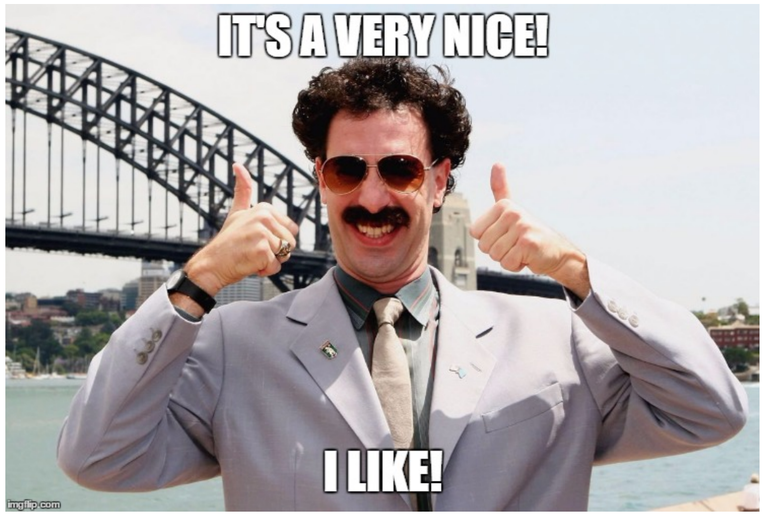
SBI Toolbox: Idea: recap

“Likelihood-free” approach to parameter estimation

Unknown

$$p(\theta|X=x) = \frac{p(x|\theta)p(\theta)}{p(x)}$$

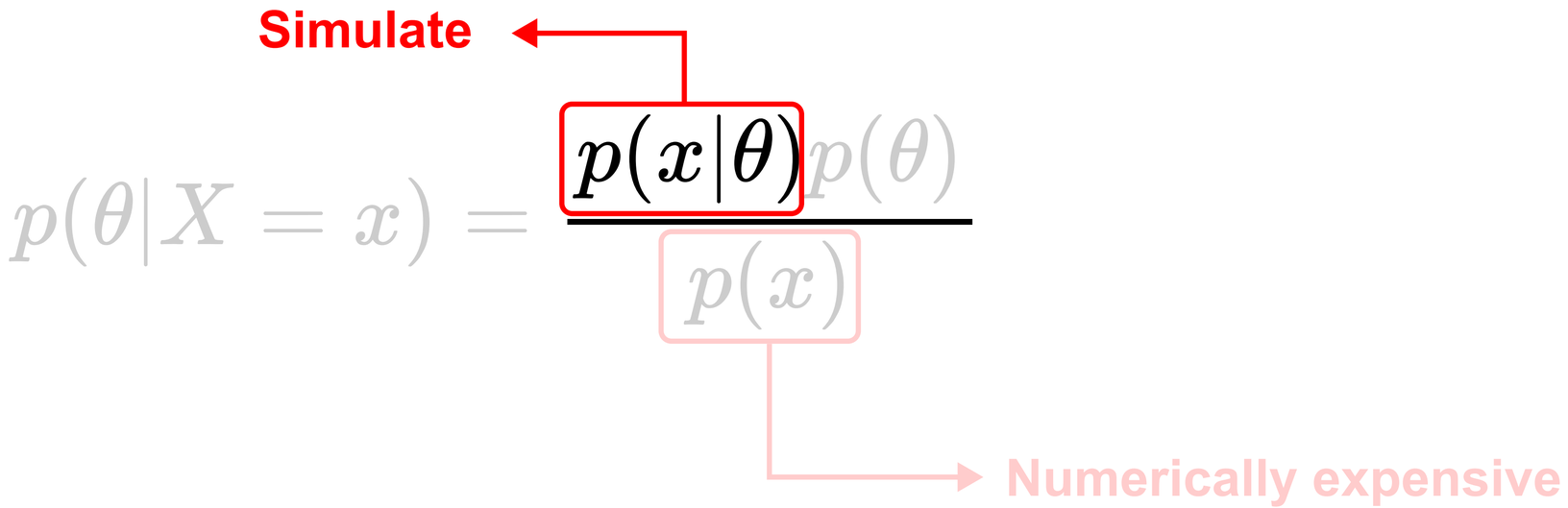
Numerically expensive



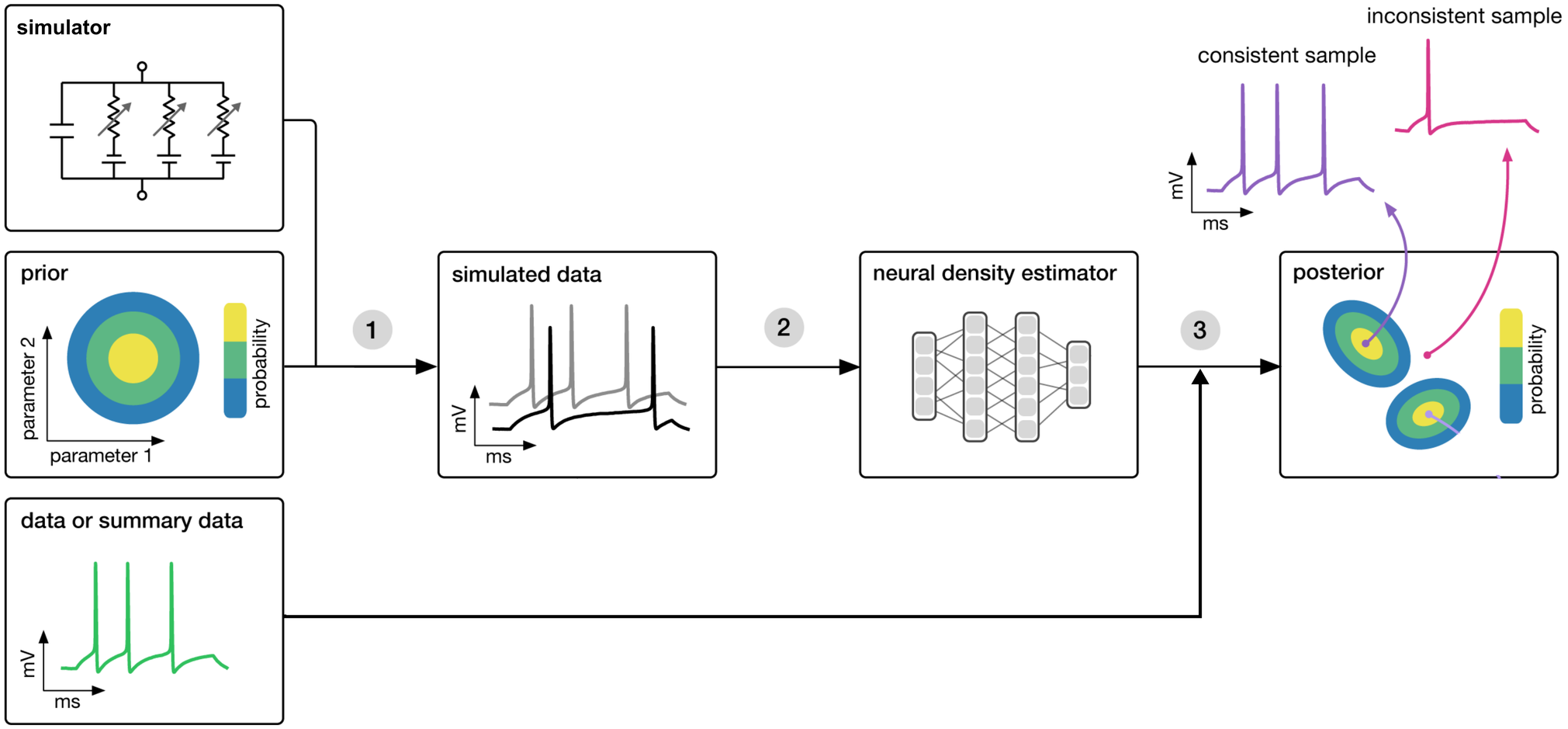
SBI Toolbox: Idea: recap

"Simulation-based" approach to parameter estimation

(redefined)

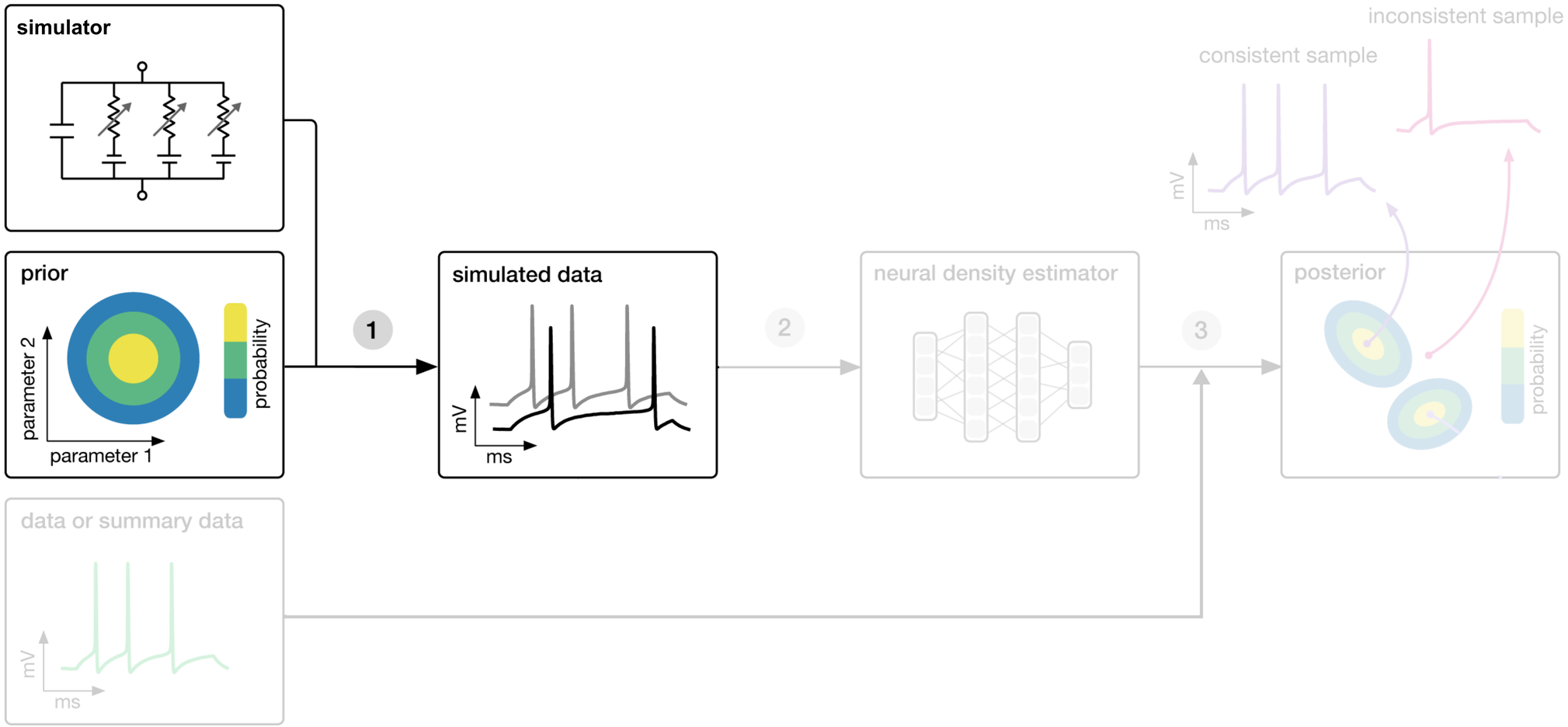


SBI Toolbox: overview

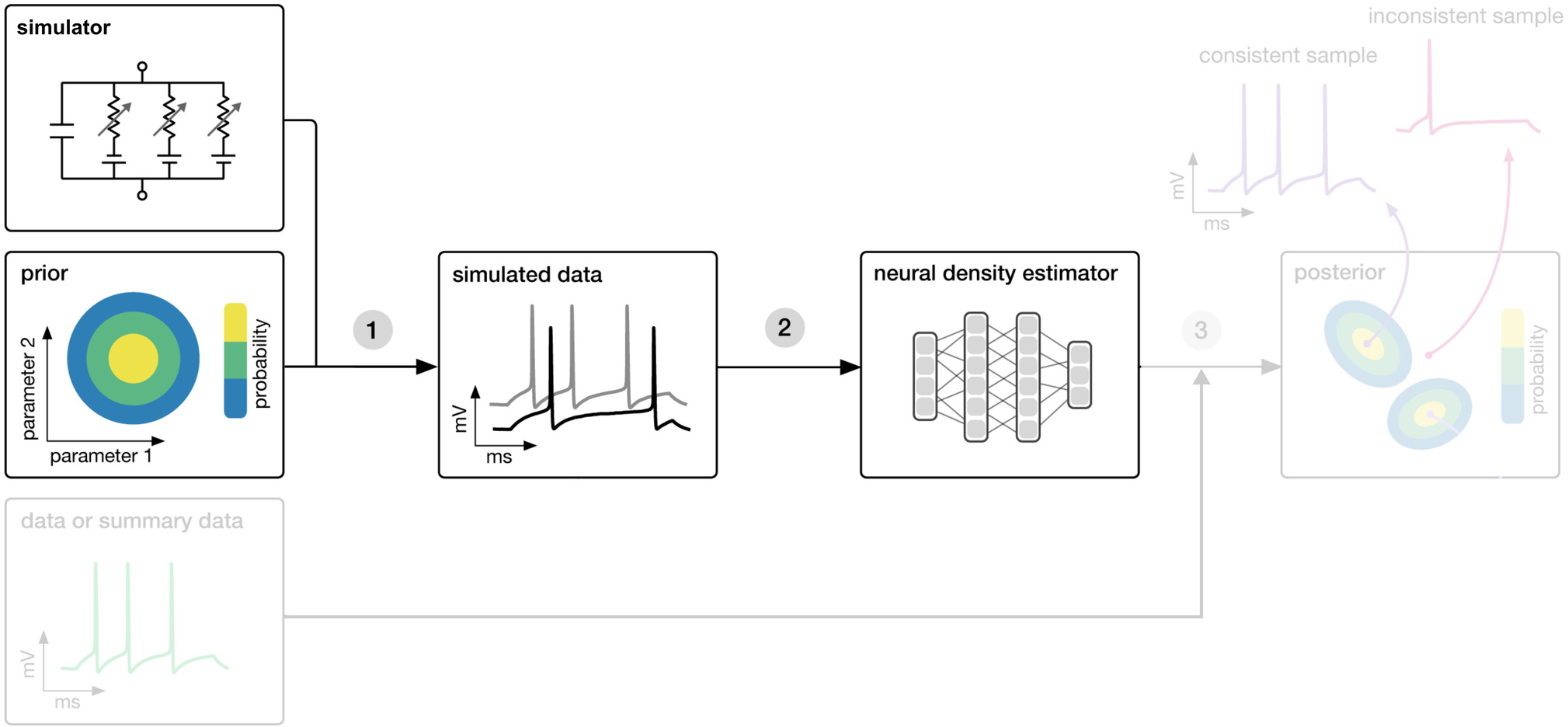


0. Basic ingredients 🍰

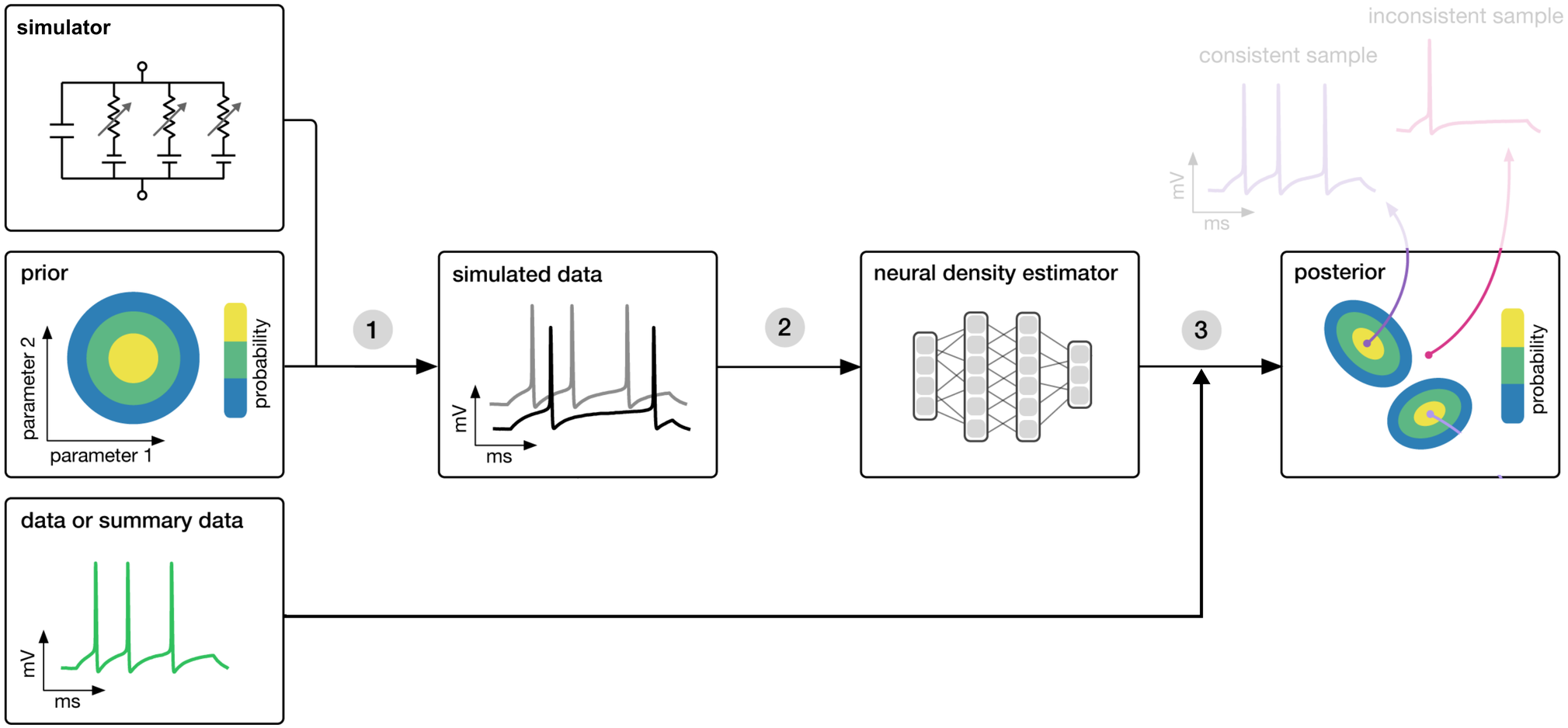
1. Simulate data



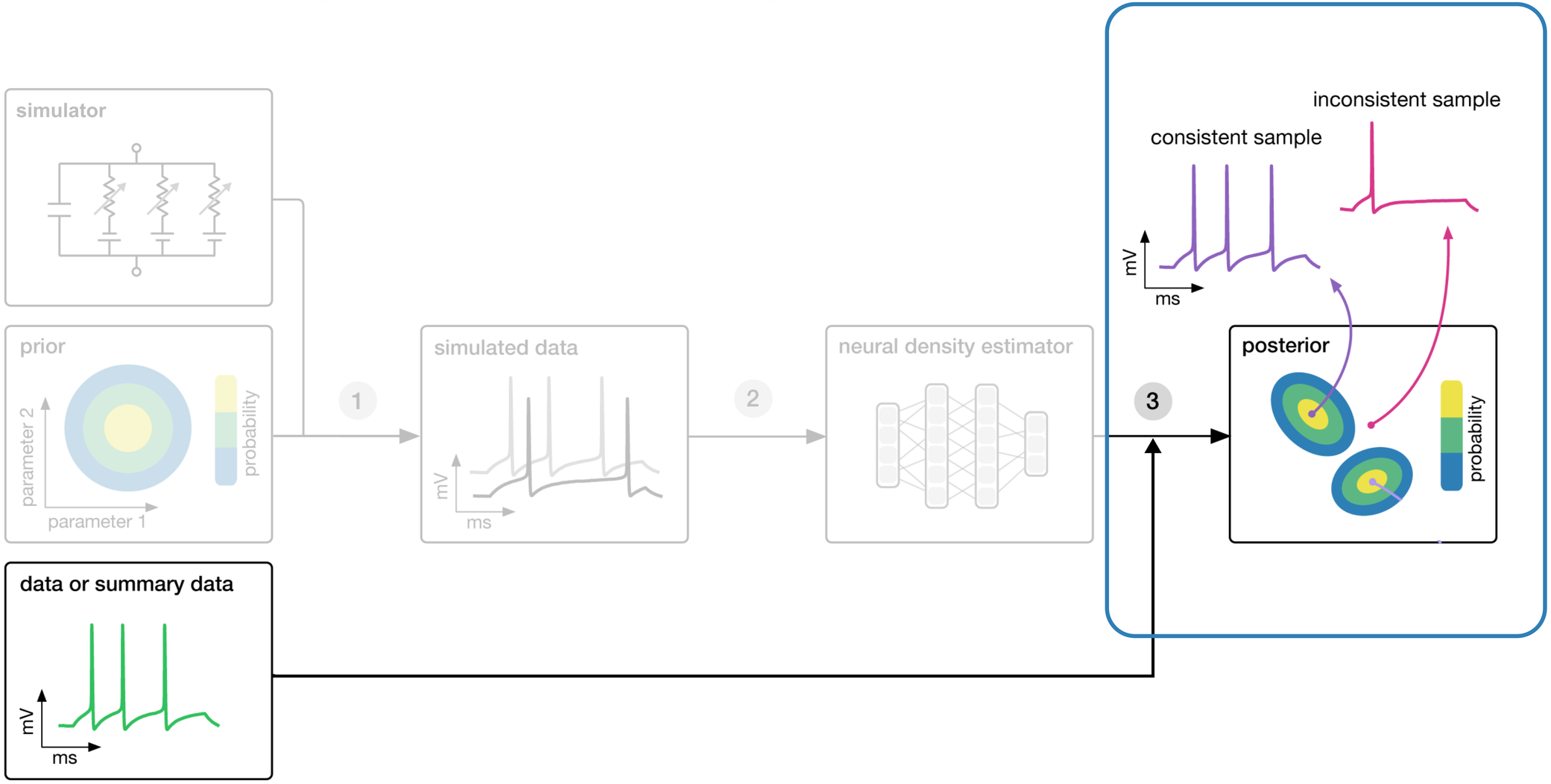
2. Pass the simulated data to the inference object



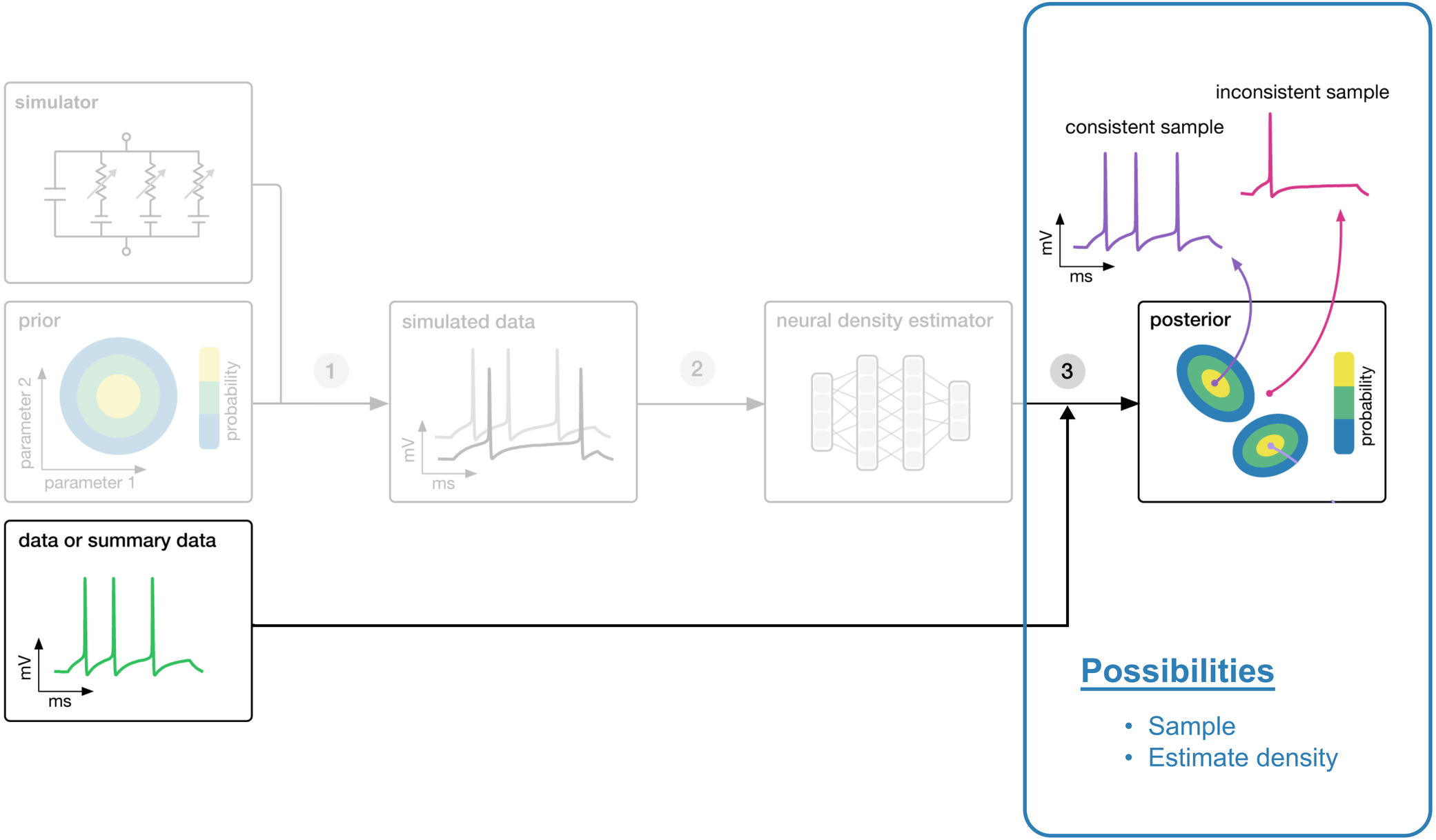
3. Build the posterior object from trained density



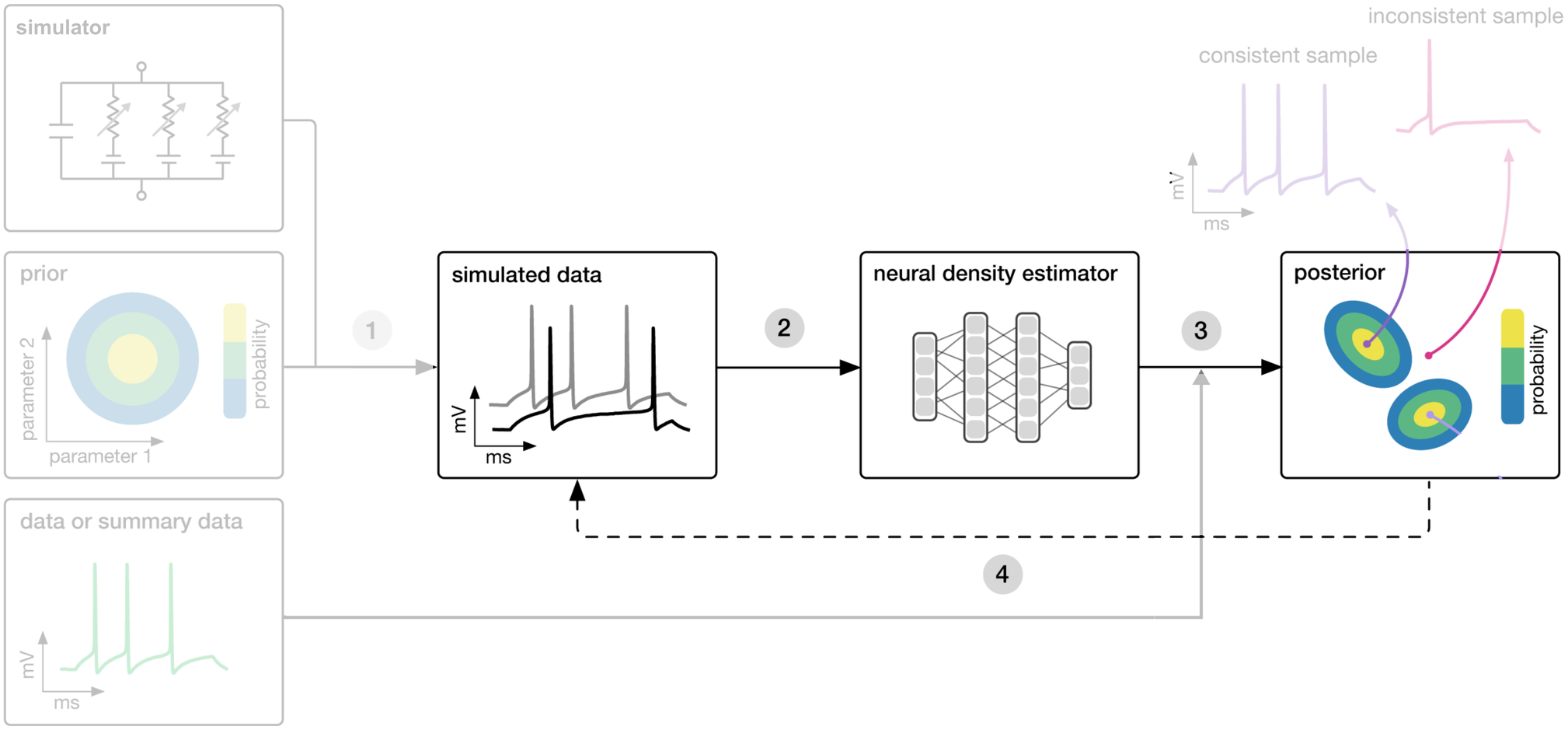
3. Build the posterior object from trained density



3. Build the posterior object from trained density



4. Multiround



Documentation

https://github.com/sbi-dev/sbi

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