

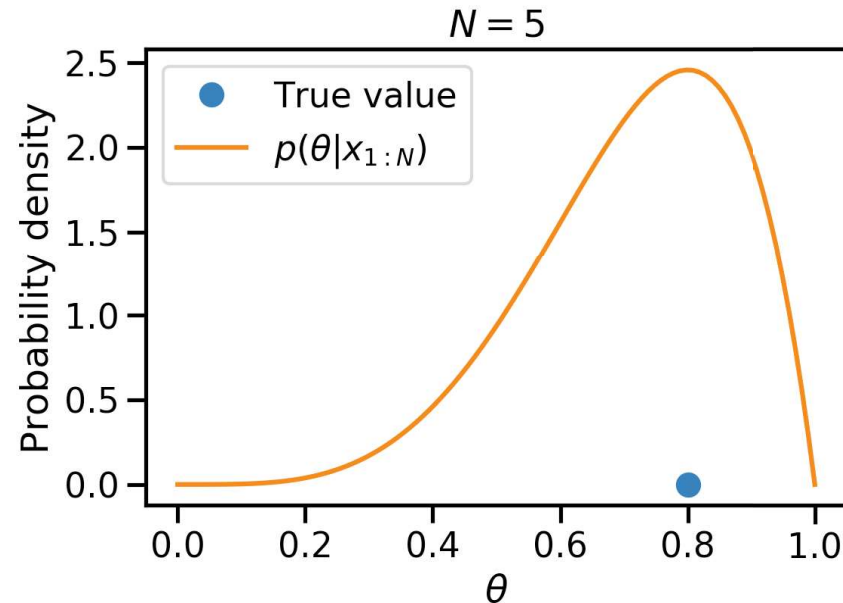
# Lecture 12: Analytical examples of Bayesian inference

Professor Ilias Bilonis

## Credible intervals

# Credible Intervals

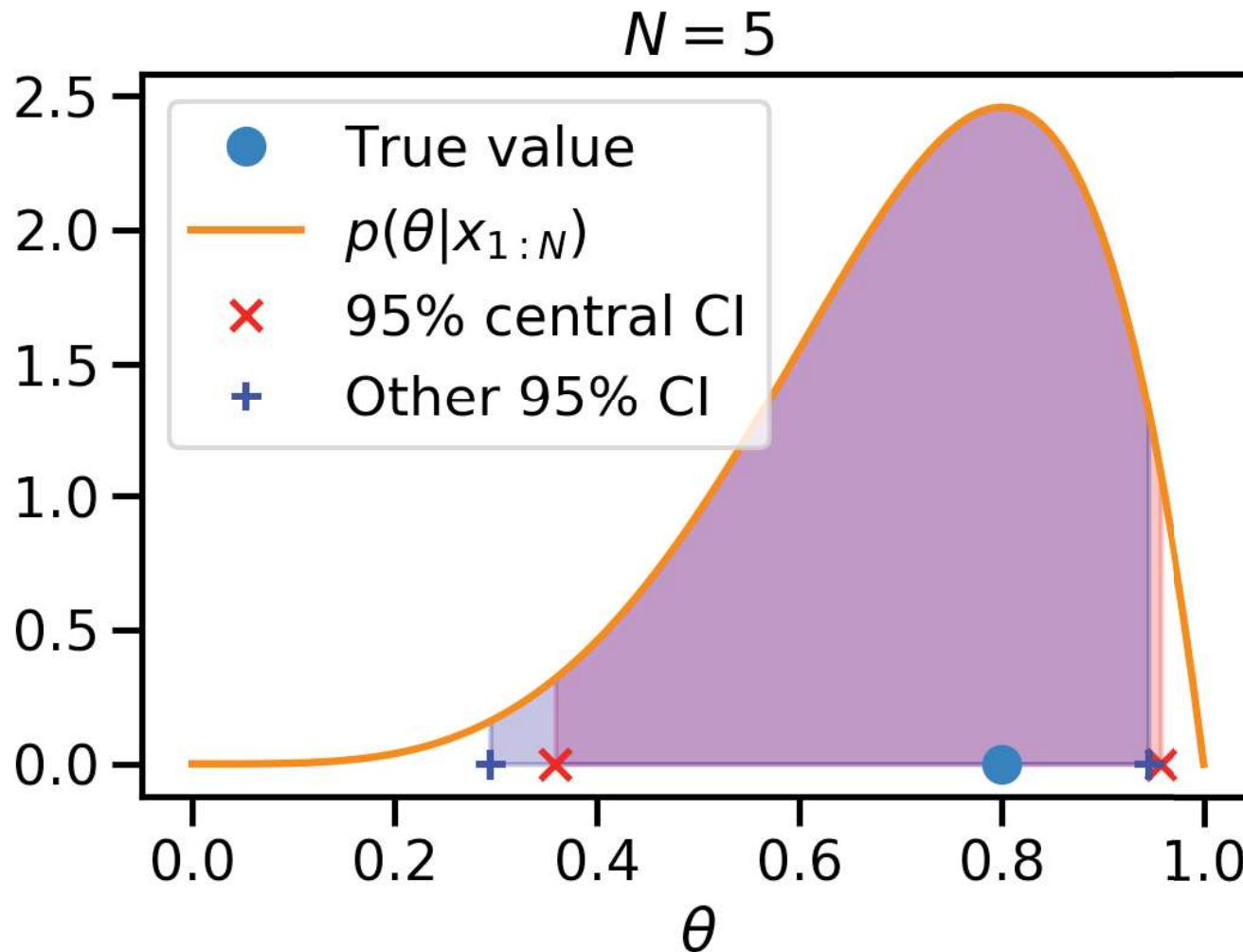
Posterior



*find* *find*

$$\underline{p(\ell \leq \theta \leq u | x_{1:N}) = 0.95}$$

# There are Many Credible Intervals



# The Central Credible Interval

$$\left. \begin{aligned} p(\theta \leq \ell | x_{1:N}) &= 0.025 \\ p(\theta \leq u | x_{1:N}) &= 0.975 \end{aligned} \right\}$$

Also known as  
predictive  
quantiles



$N = 5$

