





Food expenditure	What it does NOT say
 For observed data, B_{1.96} = [131.10, 156.18]. Will report A 95% (ML) confidence interval for μ is [131.10, 156.18]. Recall, μ is a physical quantity – we could calculate it if we had recorded the expenditure of each and every student What does the statement (in blue) say about μ? 	 It does NOT say that given what we have observed, there is 95% probability that μ is between 131.10 and 156.18. Once the data is observed, there is nothing random left in the statement μ ∈ B_{1.96}(x). The probability of 95% is a pre-observation statement about the chances of the "random" interval B_{1.96}(X) capturing the fixed constant μ.
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Interpretation III	Is this satisfactory from ML perspective
 Imagine a statistician who reports B_{1.96}(x) as an interval for μ every time he models data as X_i ^{IID} N(μ, σ²). He would have it right in about 95% of times in his career 	 Not quite. ML tries to split parameter space into "well supported" and "ill supported" sets The guarantee about B_c(x) does not offer any quantification of how well supported B_c(x) is in any particular instance
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