Hypothesis Testing

Single Sample Mean

Student's t distribution Degrees of Freedom: $n - 1$ –¿ As deg. of freedom grow, t distribution becomes more normal. $t = \frac{\overline{x} - \mu}{\sigma / \sqrt{n}}$

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William Sealy Gosset, under the pseudonym *Student*, created a hypothesis test for the population mean when the population standard deviation is unknown.

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- Sample was obtained randomly

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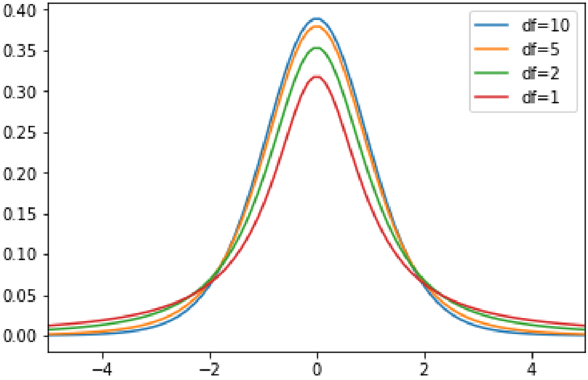

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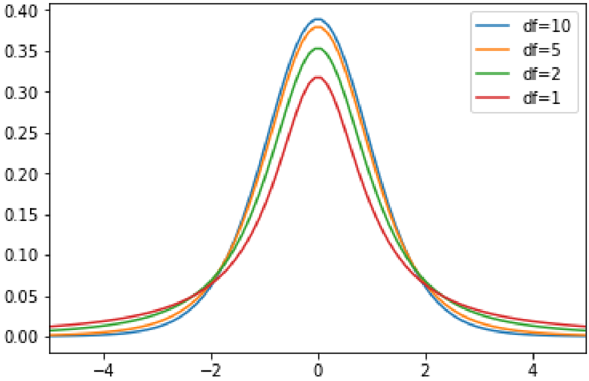

As the degrees of freedom grow, the t distribution becomes more normal.

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Confidence intervals for t distribution are given by

$$\overline{x} \pm t_{\alpha/2}\left(\frac{s}{\sqrt{n}}\right)$$

where the degrees of freedom help determine the value of $t_{\alpha/2}$

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In the grand scheme of things, it's more valuable to be able to *interpret those results*.

Example 1

Example 2