Engineering Statistics Lecture XII

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Abstract

HW #2 is due October 15, 2019:

- Section 2.3 #23-37 odd
- Section 2.4 #49-65 odd
- Section 2.5 #73-93 odd

NO CLASS THURSDAY, OCTOBER 10, 2019

1 Mathematical Expectiation

Written as E[argument], expected values give us an idea of what to "expect" of the argument involving a random variable. It is not any of the modes, usually. It is the average value given a PDF.

Suppose E[g(x)] is the expectation of g(X) for some random variable X with a PDF f(x):

$$E[g(x)] = \sum_{all\ x} g(x)f(x) = \int_{all\ x} g(x)f(x)dx$$

with use of the discrete or continuous sum depending upon the set upon which X operates.

1.1 Mode

Local maxima in PDFs are called "modes"