

# ML\_Core/ Math/ Distributions

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## IMPORTS

ML\_Core.Constants | ML\_Core.Math |

## DESCRIPTIONS

### **MODULE** Distributions

	Distributions
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### Children

1. [Normal\\_CDF](#) : Cumulative Distribution of the standard normal distribution, the probability that a normal random variable will be smaller than x standard deviations above or below the mean
  2. [Normal\\_PPF](#) : Normal Distribution Percentage Point Function
  3. [T\\_CDF](#) : Students t distribution integral evaluated between negative infinity and x
  4. [T\\_PPF](#) : Percentage point function for the T distribution
  5. [Chi2\\_CDF](#) : The cumulative distribution function for the Chi Square distribution
  6. [Chi2\\_PPF](#) : The Chi Squared PPF function
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## FUNCTION Normal\_CDF

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REAL8	Normal_CDF
(REAL8 x)	

Cumulative Distribution of the standard normal distribution, the probability that a normal random variable will be smaller than x standard deviations above or below the mean. Taken from C/C++ Mathematical Algorithms for Scientists and Engineers, n. Shamma, McGraw-Hill, 1995

**PARAMETER** x the number of standard deviations

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## FUNCTION Normal\_PPF

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REAL8	Normal_PPF
(REAL8 x)	

Normal Distribution Percentage Point Function. Translated from C/C++ Mathematical Algorithms for Scientists and Engineers, N. Shamma, McGraw-Hill, 1995

**PARAMETER** x probability

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## FUNCTION T\_CDF

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REAL8	T_CDF
(REAL8 x, REAL8 df)	

Students t distribution integral evaluated between negative infinity and x. Translated from NIST SEL DATAPAC Fortran TCDF.f source

**PARAMETER** x value of the evaluation

**PARAMETER** df degrees of freedom

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## FUNCTION T\_PPF

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REAL8	T_PPF
(REAL8 x, REAL8 df)	

Percentage point function for the T distribution. Translated from NIST SEL DATAPAC Fortran TPPF.f source

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## FUNCTION Chi2\_CDF

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REAL8	Chi2_CDF
(REAL8 x, REAL8 df)	

The cumulative distribution function for the Chi Square distribution. the CDF for the specified degrees of freedom. Translated from the NIST SEL DATAPAC Fortran subroutine CHSCDF.

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## FUNCTION Chi2\_PPF

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REAL8	Chi2_PPF
(REAL8 x, REAL8 df)	

The Chi Squared PPF function. Translated from the NIST SEL DATAPAC Fortran subroutine CHSPPF.

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