



Examples



based on user's choices of sample size and parameters. Dynamically adjusted views. The graph shows a Fourier model with generated data indicated by blue, fitted model indicated by red.



o **Distributions**: Visualization and user-interaction of continuous and discrete statistical distributions. Summary statistics with dynamically computed **CDF** for any given X. The graph shows Student's T distribution.



o Analyses: Includes dozens of parametric and non-parametric analyses, interactive data I/O, graphical display of results. The example shows power plots of null vs. alternative hypotheses of raw data and sample mean.

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SOCR: Web-Based Statistical Tools www.SOCR.ucla.edu

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What is SOCR?

STATISTICAL ONLINE COMPUTATIONAL RESOURCE

- \geq Web-based interactive learning environment accessed virtually anywhere AROUND THE WORLD.
- > Developed under Java, a highly-portable development language, aimed for OPEN SOURCE IN THE SCIENCE AND EDUCATION COMMUNITY.
- WIDELY USED AMONG UCLA STATISTICS UNDERGRADUATE CLASSROOMS AND RESEARCH LABS.
- \succ CONVENIENT STATISTICS ONLINE TUTORIAL WITH MANY GRAPHS.
- \geq UTILIZATION: OVER 90,000 ACTIVE USERS SINCE JANUARY 2002.

EXISTING SOCR COMPONENTS

- SOCR ANALYSES FOR DATA MINING, RESIDUAL DIAGNOSTICS, COMPUTATION OF POWER AND SAMPLE SIZE.
- SOCR CHARTS: A GRAPHICAL PACKAGE FOR ONLINE DATA VISUALIZATION, INCLUDING VARIOUS USEFUL VIDEO-LIKE EXAMPLES.
- SOCR DISTRIBUTIONS DEMONSTRATE COMMONLY-USED DISTRIBUTIONS WITH FEATURES ALLOWING USER-ENTERED PARAMETERS.
- \geq SOCR EXPERIMENTS: IN-CLASS VIRTUAL PROBABILITY EXPERIMENTS.
- ➢ USER-INTERACT SOCR GAMES ENABLE FUN-LEARNING EXPERIENCE.
- SOCR MODELER MODELS USER-ENTERED OR RANDOMLY GENERATED DATA.

RECENT SOCR DEVELOPMENTS

- \geq SOCR-R INTERFACE IMPORTS R-FUNCTIONS VIA SERVER COMMUNICATION.
- GRAPHICAL POWER ANALYSIS ADDED FOR THE SOCR ANALYSIS TOOL.
- REVISION OF SOCR MODELER POLISHES ITS GRAPHICAL USER INTERFACE.
- \geq SOCR Wiki Page Launched, including over 10 language translation.

• References http://socr.ucla.edu/htmls/SOCR_References.html

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o Charts: built-in demos and user-specified data presented in both 2D and 3D in static graphs and video-like display. A comprehensive list of charts designed for both generic and specialized usages. The graph shows a 3D pie chart.





Examples

o **Modeler Example:** Graph shows a normal mixture model of two normal distributions. Scroll bars enable dynamical change of bin size and data range for best view.

o Analysis Example: Plots of linear regression model fitting. Scatter plot of variables and graphical assistance of residual diagnostics such as Quantile-**Quantile Plot.**