

# Demos

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Joseph Lizier edited this page 41 seconds ago · 3 revisions

*List of demonstration code sets distributed with the toolkit*

## Demos

Several sets of demonstration code are distributed with the toolkit. Links to their wiki pages and their location in the distribution are given below:

- [AutoAnalyser](#) -- `demos/AutoAnalyser` -- a GUI tool to compute transfer entropy on a chosen data set with the toolkit, and also automatically generate code in Java, Python and Matlab to show how to do this calculation with the toolkit.
- [SimpleJavaExamples](#) -- `demos/java` -- a set of basic examples using the Java toolkit;
- Several demo sets mirror the `SimpleJavaExamples` to demonstrate the use of the toolkit in non-Java environments:
  - [OctaveMatlabExamples](#) -- `demos/octave` -- basic examples on using the Java toolkit from Octave or Matlab environments;
  - [PythonExamples](#) -- `demos/python` -- basic examples on using the Java toolkit from Python using the JPyPe interface;
  - [R\\_Examples](#) -- `demos/r` -- basic examples on using the Java toolkit from R using the rJava interface;
  - [JuliaExamples](#) -- `demos/julia` -- basic examples on using the Java toolkit from Julia;
  - [Clojure\\_Examples](#) -- `demos/clojure/examples` -- basic examples on using the Java toolkit from Clojure;
- [GPU](#) -- describes how to use the GPU implementation of the KSG estimators (readme stored in `cuda` folder).
- [SchreiberTeDemos](#) -- `demos/octave/SchreiberTransferEntropyExamples` -- using the toolkit to reproduce the transfer entropy examples originally included in Schreiber's 2000 paper introducing transfer entropy;
- [CellularAutomataDemos](#) -- `demos/octave/CellularAutomata` -- using the Java toolkit to plot local information dynamics profiles in cellular automata; the demo is run under Octave or Matlab;
- [DetectingInteractionLags](#) -- `demos/octave/DetectingInteractionLags` -- demonstration of using the transfer entropy with source-destination lags; the demo is run under Octave or Matlab;
- [InterregionalTransfer](#) -- `demos/java/interregionalTransfer` -- higher level example using collective transfer entropy to infer effective connections between "regions" of data;
- [NullDistributions](#) -- `demos/octave/NullDistributions` -- investigating the correspondence between analytic and resampled distributions for TE and MI under null hypotheses of no relationship; the demo is run under Octave or Matlab;

You can also review the [JUnitTestCases](#) -- the test cases for the Java toolkit included in the distribution -- these case also be browsed to see simple use cases for the toolkit.

## Extras

You may also be interested in several [extra](#) features that the toolkit has (in addition to the information dynamics calculators); e.g. Octave text file format reading and writing, matrix manipulation, mathematical functions, etc.

JIDT -- Java Information Dynamics Toolkit -- [Joseph Lizier et al.](#)

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