

Implementation in Python of a Method to Transform One-Dimensional Signals in Graphs

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Abstract : We are immersed in complex systems. The human brain, the galaxies, the snowflakes are examples of complex systems. An area of interest in Complex systems is the chaos theory. This revolutionary field of science presents different ways of study than determinism and reductionism. Here is where in junction with the Nonlinear DSP, chaos theory offer valuable techniques that establish a link between time series and complex theory in terms of complex networks, so that, the study of signals can be explored from the graph theory. Recently, some people had purposed a method to transform time series in graphs, but no one had developed a suitable implementation in Python with signals extracted from Chaotic Systems or Complex systems. That's why the implementation in Python of an existing method to transform one dimensional chaotic signals from time domain to graph domain and some measures that may reveal information not extracted in the time domain is proposed.

Keywords : Python, complex systems, graph theory, dynamical systems

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