

# LickNet: Software Tools Collection for Guitar Licks Networks

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## Abstract

## 1 Introduction

The software described in this document is born with the aim to analyze the relations between notes patterns in guitar solos, often called guitar licks. The choose of guitar solos has been taken because of the large amount of data available online but the subject may be extended to different, but similar, kind of data. For example drum patterns relations in jam sessions or other instruments executions, compositions and improvisations may be considered. It has been chosen to represent the data elements and their relations within a network, as to the means offered by the graph theory useful in a mathematical analysis.

The area of scientific research that usually is interested in the empirical study of real-world network such this one is the study of *Complex Networks*.

## 2 Complex Networks

### 2.1 Related Works

## 3 LickNet

### 3.1 Components Overview

- Networks Generator
- Lick Classifier
- Licks Generator

## **4 Networks Generator**

### **4.1 Complex Networks Analysis**

## **5 Lick Classifier**

### **5.1 Tests and Results**

## **6 Licks Generator**

### **6.1 Tests and Results**

## **7 Future Development**

## **8 Conclusions**

## **References**

- [1] Murali S. N., *Music: Markov Chains, Genetic Algorithms and Scale Transformation*. on Youtube at <https://www.youtube.com/watch?v=FvrcvXpcfvM>, 2013