

Graph Algorithms for Visualizing High Dimensional Data

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Louvain Community Detection Algorithm

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- Personal Learning
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About



Project Research Group

The project is done under the umbrella of LARCA(Laboratory for Relational Algorithmics, Complexity and Learning) Project Directors :

- ▶ Prof. Ricard Gavalda Mestre
- ▶ Prof. Marta Arias Vicente



What is Community?

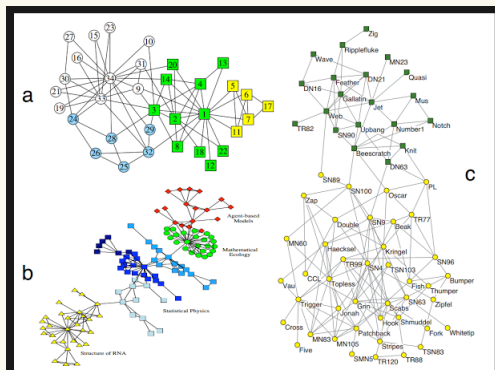


Figure : Communities: [1]

Goal of the Project

- ① To survey a few algorithms that aim in community finding keeping in mind that the input is from the medical domain.
- ② To choose an algorithms that benefit the purpose of organizing graphs from medical domain and for the purpose of visualization.
- ③ To implement the algorithms and test the efficiency of the algorithm using variety of graphs.
- ④ To build a Graphic User Interface (GUI) which enables visualization of the raw input on a web browser by drawing graphs.



Example Bullet List

This is an example of a bulleted list. Note that the bullets can be customized per the indent level.

- ▶ Hello, I am a bullet.
 - ▶ This is a sub-bullet.
 - ▶ This is a sub-sub-bullet.
- ▶ I am also a normal bullet..



Graph



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Louvain Community detection Algorithm

This section has some examples of common slideshow elements.



Example of a Theorem

It is easy to include mathematical theorems and such:

Theorem

The quick brown fox jumps over the lazy dog.



Example Equation

$$8/4 = \frac{8}{4} = 8 \cdot \frac{1}{4} = 8 \cdot 4^{-1}$$

$$\begin{pmatrix} 2 & 1 \\ 0 & 1 \\ 1 & 4 \end{pmatrix}$$

Personal Learning

Since the project had more scope for exploration. My interest in Data Visualization has increased. My interest in graphs has increased. My python programming skill has also increased along with that I have also learned to code for web technologies on my own.



Software tools

- 1 git
- 2 github pages
- 3 Linux OS



About

This slide show is mostly to demo the Hokie Beamer theme and see how it looks in various slideshow elements. Some parts of the presentation are taken from Jean-Etienne Poirrier's example presentation, which can be found here:
<http://www.poirrier.be/jean-etienne>.



Santo Fortunato.

Community detection in graphs.

Physics reports, 486(3):75–174, 2010.



Jure Leskovec and Andrej Krevl.

SNAP Datasets: Stanford large network dataset collection.

<http://snap.stanford.edu/data>, June 2014.



List of References that were used



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Thank you

Thank you for all those who supported me throughout the project. It was a Great time at Barcelona working with Prof.Ricard and Prof.Marta.



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