

# INTRODUCCIÓN A LA ANALÍTICA DE GRAFOS

CÁTEDRA INTERNACIONAL de la Facultad de Ingeniería de la Universidad Nacional de Colombia

## Remy's second week Homework Assignment

**Question:** Use what you have learned about advanced Network Analysis to describe the structure of a dynamic network corresponding to real data.

### Expected documents (same as first week):

-A Jupyter notebook (export as HTML) containing the code used, with textual comments (Text cells) to describe the meaning of processes done in each cell.

-A report (PDF/Open office/Word/Latex) containing an analysis of the studied network. If you prefer, you can use only a notebook, but in that case it must be structured as a report (You can use Markdown language (<https://en.wikipedia.org/wiki/Markdown>) in Jupyter notebook)

### Additional information:

Compared to week 1, I expect that you:

-Work with a dynamic network, i.e. a network with at least 2 steps. More than 2 is better.

-Use at least 2 new techniques among the ones we have learned:

-Link prediction

-Graph Embeddings

-Analysis of dynamic networks (micro/macro evolution, paths...)

-Dynamic community detection

As for the first week, I'll not evaluate technical skills but rather if you have understood what type of insight you can learn about data using these techniques.

### Dataset:

-The goal of your last week (Week 4) is to do a project involving a complex dataset. For the current assignment, you can use a simple, "toy" dataset.

-A good place to start are the "Game of Throne" datasets available on my webpage, books or series. But feel free to use any other dataset. Previous dataset lists also contained dynamic networks.