
PROJECTS

Teachers

Pierre VANDERGHEYNST
Pascal FROSSARD
Andreas LOUKAS
Michaël DEFFERRARD
Volodymyr MIZ

Assistants

Michaël DEFFERRARD
Volodymyr MIZ
Effrosyni SIMOU
Eda BAYRAM

Benjamin RICAUD

Nicolas ASPERT
Clément VIGNAC
Guillermo JIMENEZ
Nikolaos KARALIAS

Goal

Tell a **data story** or build a **data product**.

How

1. Define a problem.
2. Tackle it.
 - ▶ Choose appropriate data and tools.
 - ▶ Use the Data Science process and the scientific method.
3. Communicate the results.

Example problems

IMDb How do actors choose a film to play in? Do they form communities?
What are the characteristics of those communities?

FMA Can an online music platform recommend annotations (such as tags or genres) to artists regarding their newly uploaded songs?

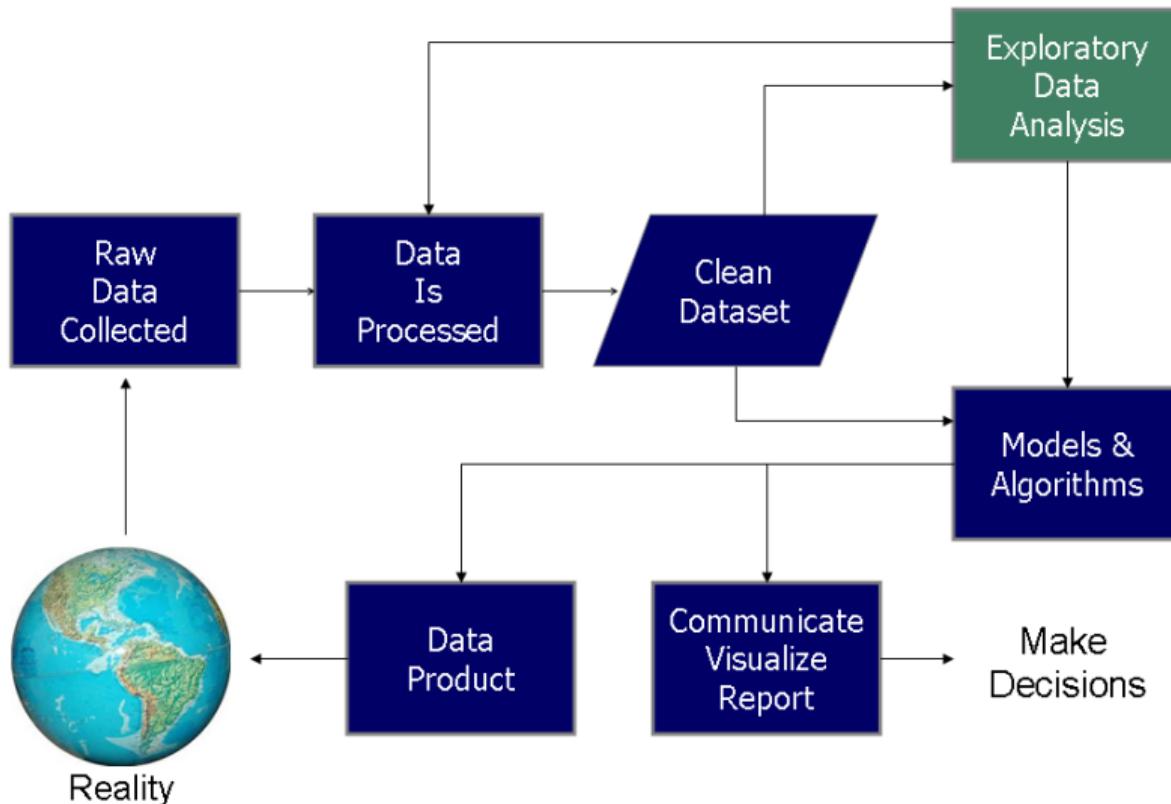
Senators Are senators truly divided in republicans and democrats? Can I predict the votes of a senator knowing the votes of “similar” senators?

More ideas on GitHub. Come up with your own!

How

1. Define a problem.
2. Tackle it.
 - ▶ Choose appropriate data and tools.
 - ▶ Use the Data Science process and the scientific method.
3. Communicate the results.

Data science process



How

- 1.** Define a problem.

- 2.** Tackle it.
 - ▶ Choose appropriate data and tools.
 - ▶ Use the Data Science process and the scientific method.

- 3.** Communicate the results.

Communication

How to beat terrorism efficiently: identification of set of key players in terrorist networks

Marco Pietro Abrate, Natalie Bolón Brun, Shahow Kakavandy, Jangwon Park
École Polytechnique Fédérale de Lausanne, 2019

I. INTRODUCTION

Proliferation of terrorism in recent years has led people to believe it as a real threat to their livelihood. Vital to the success of such terrorist organizations are hereby refer to the largest component of the original network simply as the 'original network'. The following describes the network inversion process:

- 1) Extract terrorist names from the unique ID of

report



presentation

natbolon / terrorist_network_weaknesses

Code Issues Pull requests Projects Wiki Security Insights

Watch 0 Star 2 Fork 9

NTDS_2018 Terrorist Network Project

36 commits 1 branch 0 releases 3 contributors MIT

Branch: master New pull request Create new file Upload files Find file Clone or download

marcopabrate deleted useless folder Latest commit b800b51 on Feb 7

data corrected imports 10 months ago

project new 9 months ago

.DS_Store final version of code 10 months ago

.gitignore gitignore created 10 months ago

LICENSE final version of code 10 months ago

Presentation.pdf new 9 months ago

README.md Update README.md 10 months ago

Report.pdf final version of code 10 months ago

requirements.txt functions into new files and requirements 10 months ago

README.md

How to beat terrorism efficiently: identification of set of key players in terrorist networks

Network Tour of Data Science, 2018, EPFL

This is the directory of the project for the course "A Network Tour of Data Science" fall 2018, EPFL. This file contains practical information on the project implementation and how to run it. For more detailed explanation of the project (goals, implemented algorithms,...), please refer to the report (Report.pdf).

The purpose of this project is to learn various vulnerable points of a terrorist network by identifying a set of key players whose roles are vital to the success of such organizations. We seek to develop an appropriate methodology to evaluate the importance of each terrorist to the effectiveness of the network as a whole, and

code repository

Beware

- ▶ Set a goal that is attainable given your understanding of the data and tools.
- ▶ A project is not a set of experiments. It should be motivated and follow a story.
- ▶ Projects should use tools and ideas from the lectures. They should include graph and network data aspects, and more generally fall under the scope of the class.
- ▶ Building a good graph is as important as analyzing it. Your graph should be built towards the goal of solving your problem.

Grading criteria

Details on GitHub

1. Story (20 points): motivation and choices
2. Acquisition (10 points): getting data
3. Exploration (20 points): understanding the data
4. Exploitation (30 points): using the data
5. Communication (20 points): communicating the results

Peer-review

A pedagogical tool to:

1. Receive feedback on your work.
2. Understand the grading criteria.

Deliverables (intermediate peer-review)

summary Summarize your project. Four students will read it to evaluate your project. This evaluation won't count towards the project grade. The summary is a PDF of at most 1 page of text (and 1 supplementary page for figures and tables).

peer-review Each student individually evaluates a project on the 5 grading criteria. The evaluation must be motivated. The motivations will be graded (10% of the course grade).

Deliverables (final evaluation)

report Describe your motivations, explain what you did and why, and state your conclusions. The report is a PDF of at most 5 pages.

code All the code you developed for the project must be stored in a GitHub repository. It should contain a useful readme and a license. Code should be organized and clean.

presentation Impress us! Presentations are 12 minutes long, followed by 3 minutes of questions. Each group member must talk.

Deadlines

Dec 4 submit the project summary

Dec 10 submit the peer-review report (individual)

Jan 10 submit the project report

Jan 10 submit a link to the project's GitHub repository

Jan 21-22 give an oral presentation

Jan 24 upload the presentation slides

Resources

GitHub:

- ▶ Dataset and project ideas
- ▶ Grading criteria

Past projects:

- ▶ NTDS'18: https://github.com/mdeff/ntds_2018
- ▶ NTDS'17: https://github.com/mdeff/ntds_2017

Spammer... Catch me if you can

TEAM 10
Hedi Ferhat - Paul Jha -
Christina Mantzaflari - Nguyen Minh-Nguyet

A Netflix Tour of Data Science

Film Suggestion by Diffusion on Graphs

Avignon Edwige - Fourcade Pierre - Nguyen Kenneth

Marc GLETTIG
Matthias MINDER
Yves RYCHENER
Charles TROTIN
Ecole Polytechnique Fédérale de Lausanne
23/01/2019

Wiki

Wikipedia Analysis Using a Keyword Based Graph

Project – A Network Tour of Data Science

Have fun!

Questions?

EPFL **Unil**
ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE UNIL | Université de Lausanne

An exploratory study on the brain disconnectome

Claudia Bigoni
Giorgia Giulia Evangelista
Emeline Mullier
Joan Rue

Professors:
Prof. Paolo Frossati
Prof. Pierre Vandergheynst

NTDS Final presentation 22nd January, 2018

PROJECT 2018/9: A Network Tour of Data Science

A Network Analysis
The 2018 FIFA World Cup

Maxence DRAGUËT
Robert INJAC
TEAM 9
Yannick KLOSE
Manana LORTKIPANIDZE

NTDS TEAM 52: Mood Changing Playlist Generator
Jawwad Imtiaz Ahmed - Reza Hosseini
Emmanouil Jacovides - Miguel Gómez Quintanilla