

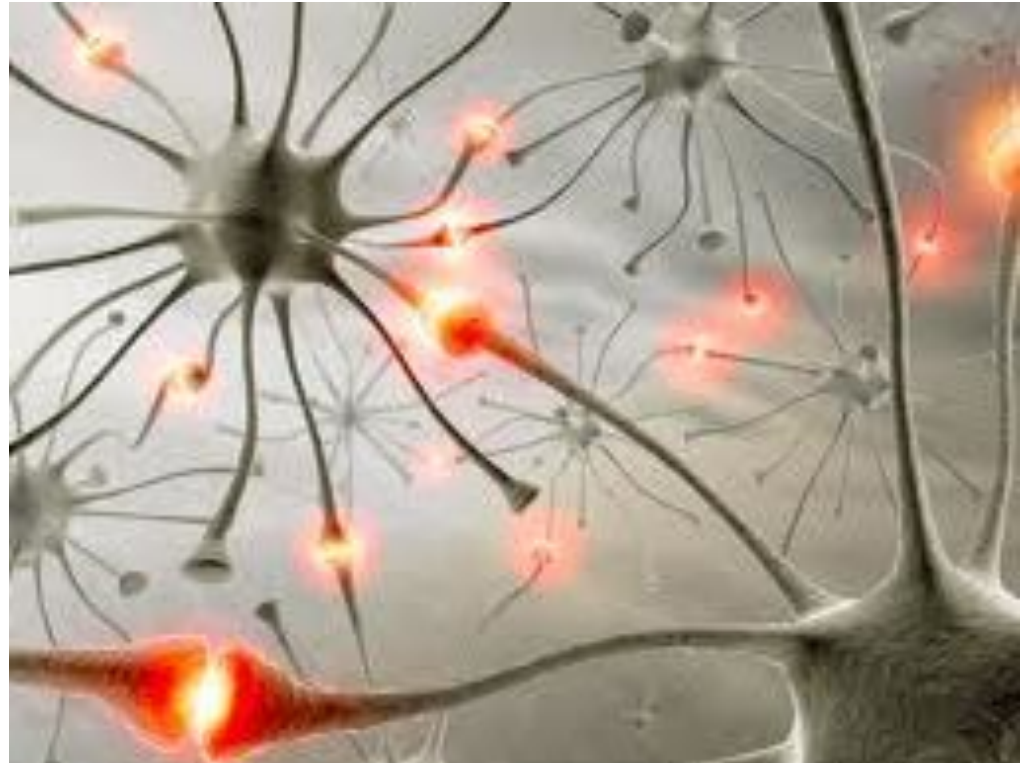
# GitHub

## Visualização da Rede Complexa - CONETVIS

Visualização de Dados, Prof. Nivan Roberto  
CIN – UFPE  
maio de 2018



# O que são Redes Complexas?





# Redes Complexas

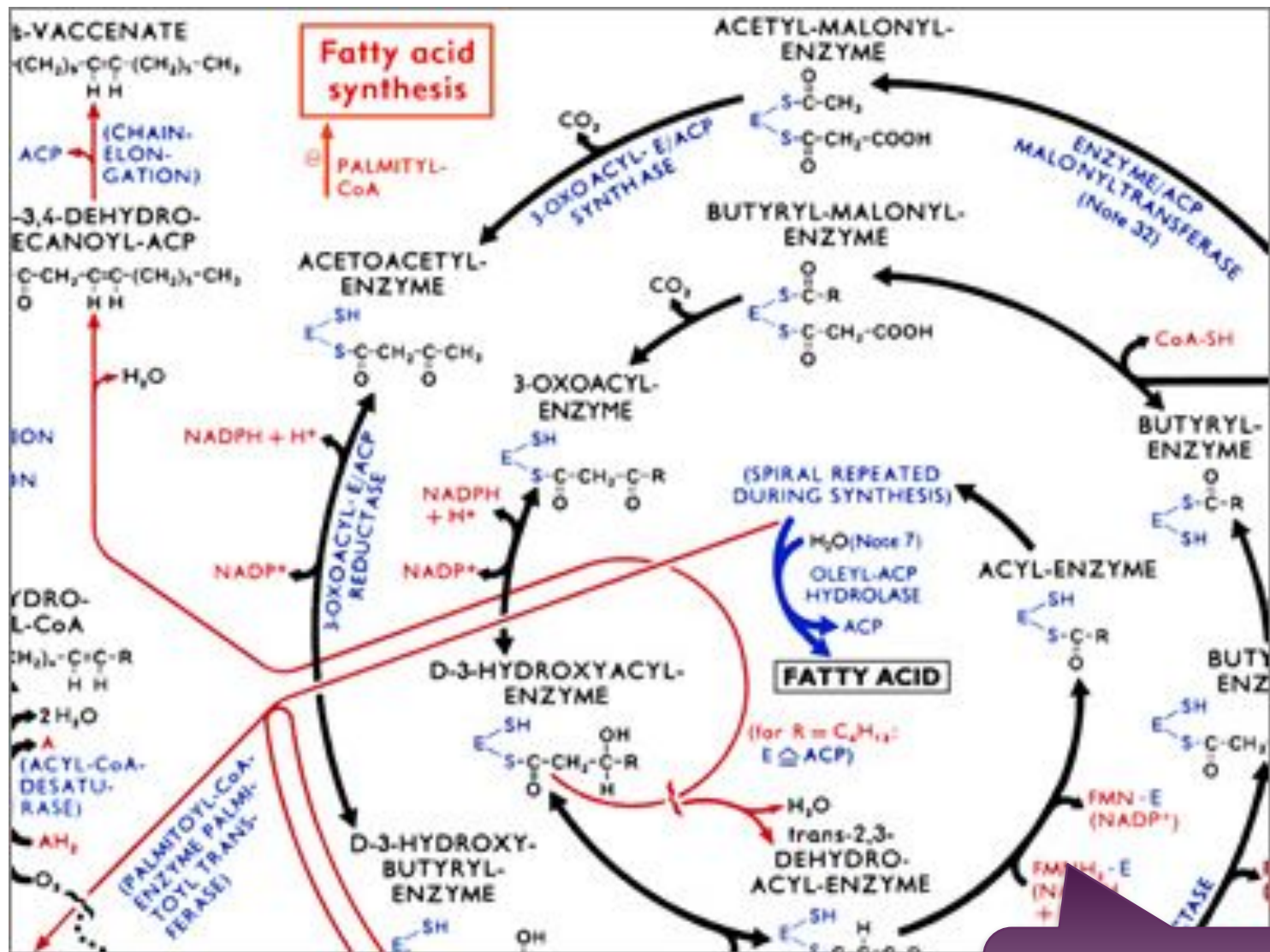
“As redes complexas são um tipo de grafo que apresentam propriedades topológicas especiais. Elas permitem representar relações entre os nós(indivíduos) através das arestas.”

## Tipos de Redes

- **Redes Biológicas**
  - redes reguladoras de genes
- **Redes Informacionais**
  - redes de influência intelectual
- **Redes Tecnológicas**
  - Internet, redes de transportes
- **Redes Sociais**
  - redes de amizades, redes de colaboração.

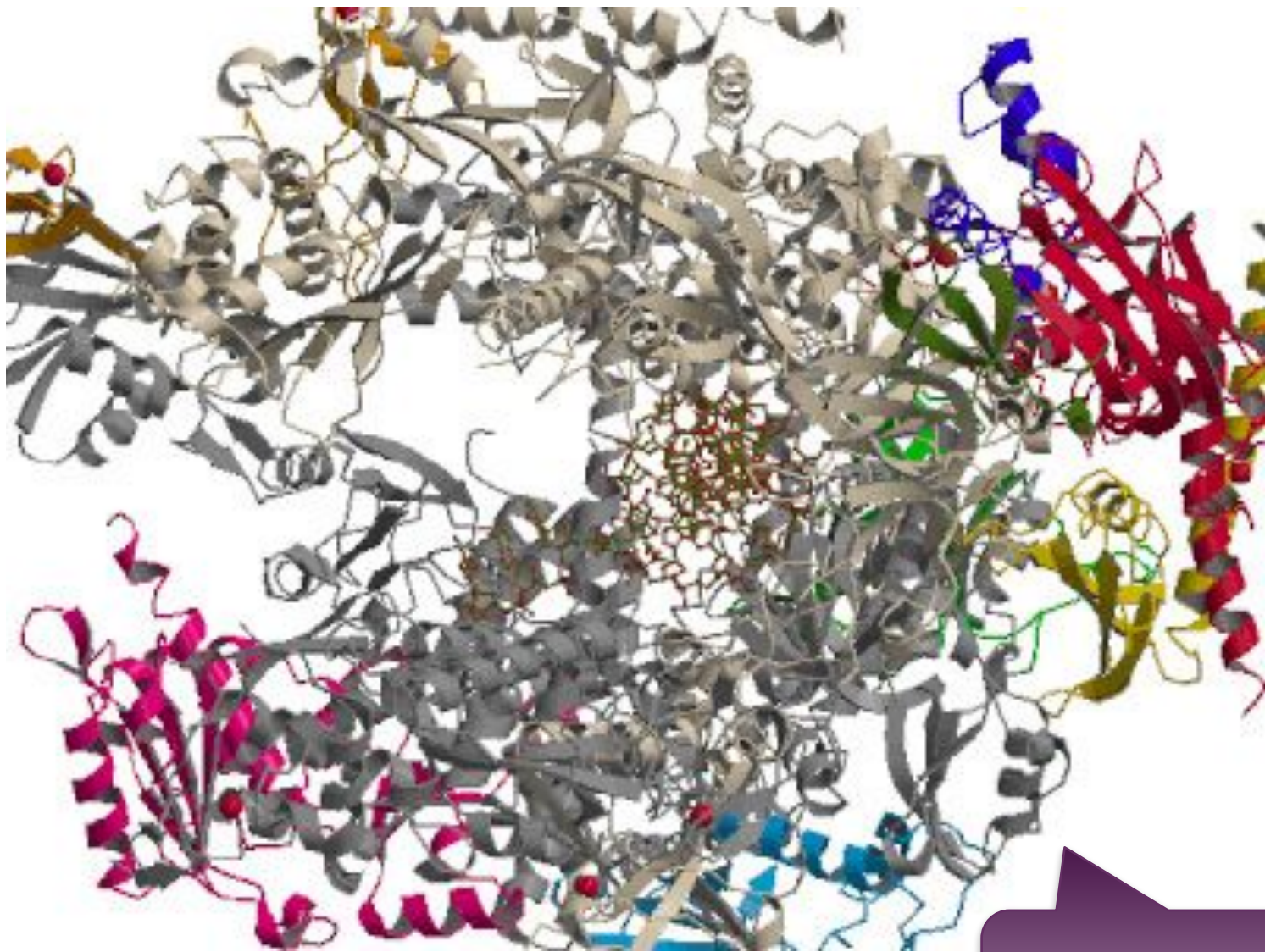
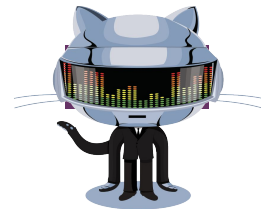


Cadeia Alimentar!!



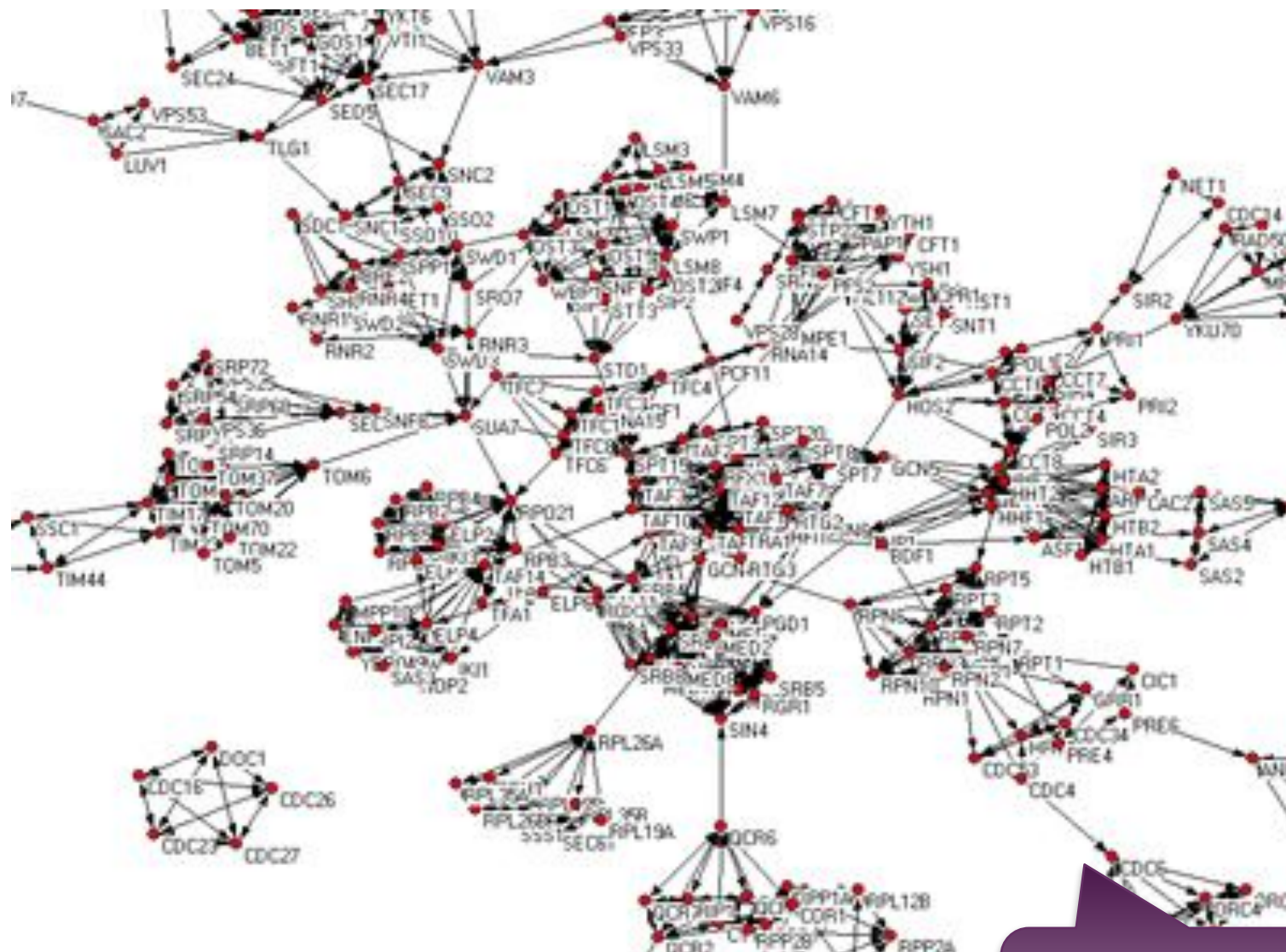
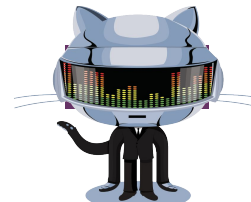
## Rede de caminhos metabólicos





Fonte: Visual Complexity

Análise de Redes  
Complexas



Fonte: Visual Complexity

Interação das proteínas





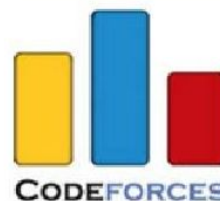


# Análise de Redes de Programadores

Repositórios  
Fóruns  
Competições

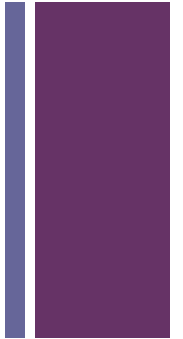


Quora





# + Objetivo



**Extraír perfil dos grupos, segundo caracterização:**

- **“score developers”** - Desenvolvedores
- **“mantenedores”** – Gerentes de projetos/modulos
- **“patchers”** – Concertam bugs (geralmente externos)
- **“bug reporters”** –Reportam bugs
- **“documenters”** – Gerenciam documentos
- **“users”** – Usuários de bibliotecas

# + Objetivo

## **Atividades dos usuarios:**

- Projetos Criados
- Contribuição em projetos open-source
- Colaboração em projetos
- Projetos favoritos (Starred)
- Commits: Linguagens
- Follow actions (?)



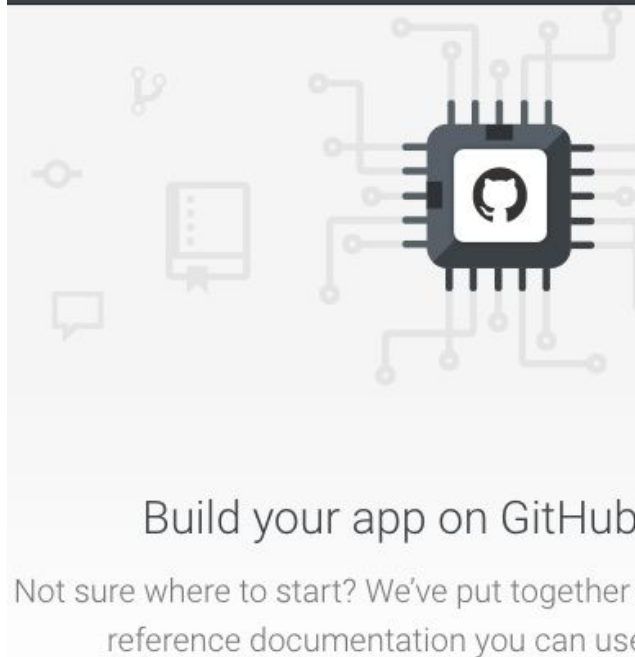
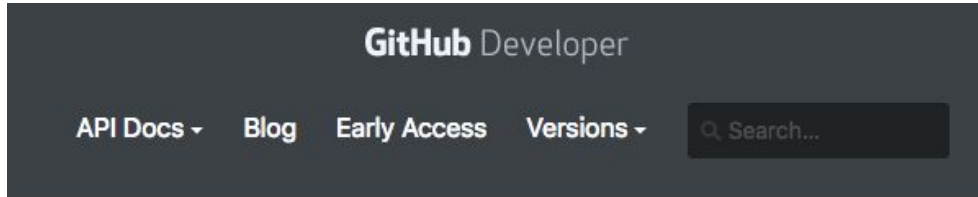


A rede social para desenvolvedores!

- Ambiente de gerenciamento e hospedagem de código com Git
- Completando 10 anos em 2018
- Interação entre os usuários através de contribuição em projetos
- ~24M de usuários ativos
- ~70B de repositórios (~25M ativos)
- ~1B de commits
- Dados totalmente coletáveis
- Análise de Dados: Octoverse!



# + Github REST API v3



## REST API v3


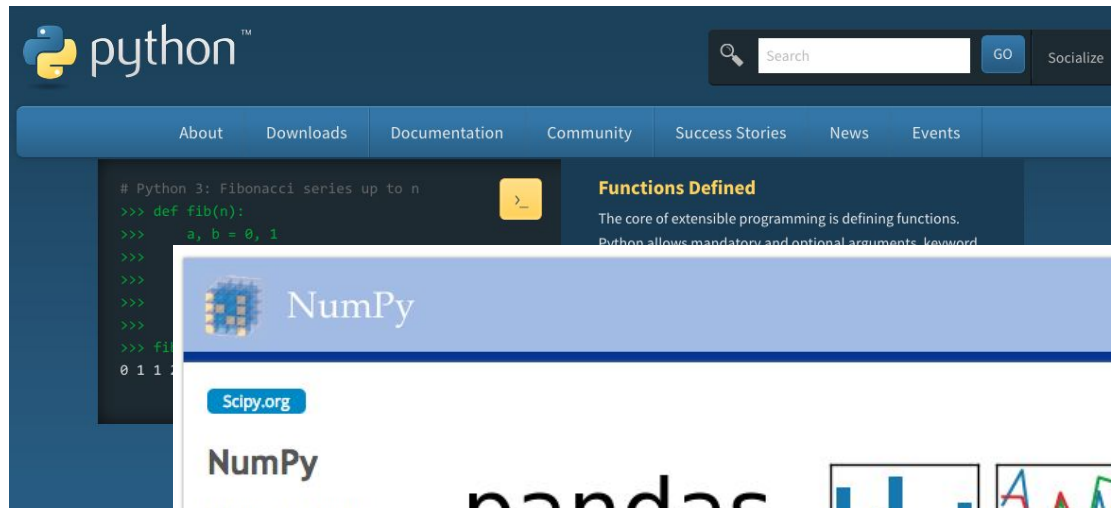
[Reference](#) [Guides](#) [Libraries](#)



Octokit comes in  
many flavors

Use the official Octokit library, or choose between any of the available third party libraries.

# + Ferramentas Utilizadas



## NumPy

Scipy.org

NumPy is the fundam

- a powerful N-dim
- sophisticated (br
- tools for integrati
- useful linear alge

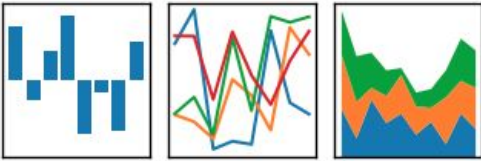
Besides its obvious sc

data. Arbitrary data-t

ety of databases.

NumPy is licensed un

# pandas

$$y_{it} = \beta' x_{it} + \mu_i + \epsilon_{it}$$


home // about // **get pandas** // documentation // community // talks // donate

## Python Data Analysis Library


*pandas* is an open source, BSD-licensed library providing high-performance, easy-to-use data structures and data analysis tools for the [Python](#) programming language.

*pandas* is a [NumFOCUS](#) sponsored project. This will help ensure the success of development of *pandas* as a world-class open-source project, and makes it possible to [donate](#) to the project.




### VERSIONS

<b>Release</b>
0.22.0 - December 2017
<a href="#">download</a> // <a href="#">docs</a> // <a href="#">pdf</a>
<b>Development</b>
0.23.0 - 2018
<a href="#">github</a> // <a href="#">docs</a>

# + Dados Coletados

 location:Recife

Pull requestsIssuesMarketplaceExplore



Repositories

Code

Commits

Issues

Topics319K


Wikis


Users1K


Busca


1,899 users


Sort: Best match ▾

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Falo sobre Angular, Ionic, Firebase, PWA, AMP e mais uma sopa de letrinhas. Mando muito e-mail, gosto de F1, de burritos e de piadas ruins.  
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Languages

Java	353
JavaScript	242
Python	154
HTML	103
PHP	94
Ruby	83
CSS	74
C	50



```
# This script requires github3.py version 0.9.6
# pip install github3.py
```

```
import os
import pandas as pd
from github3 import login
```

```
GITHUB_API_TOKEN = os.environ.get('GITHUB_API_TOKEN')
gh = login(token=GITHUB_API_TOKEN)
LOCATION = 'Recife'
```

```
def queries_list(location=LOCATION):
    return (
        'location:{} followers:>1'.format(location),
        'location:{} followers:1'.format(location),
        'location:{} followers:0'.format(location),
    )
```

Busca

```
def search_users(query):
    return [u.user for u in gh.search_users(query, sort='followers')]
```

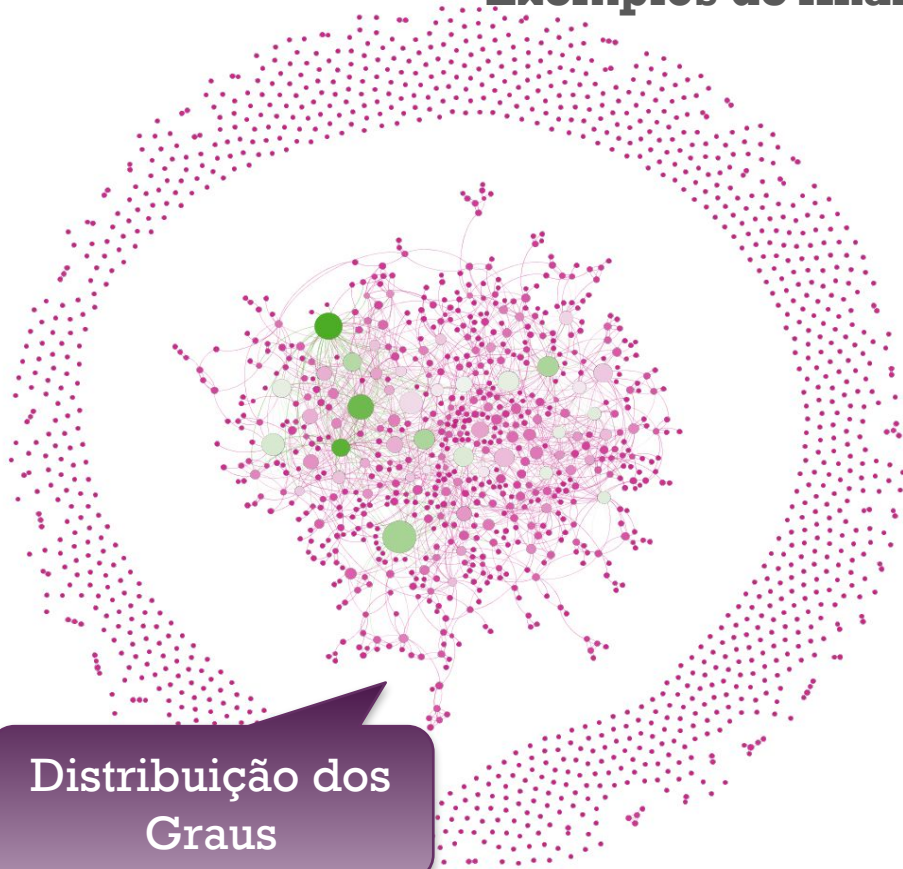
```
def fetch_gh_users():
    return [search_users(q) for q in queries_list()]
```

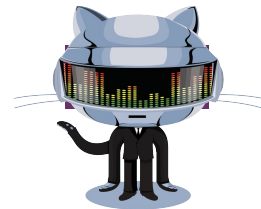




Gephi 0.9.2

## Exemplos de Análise de Centralidade

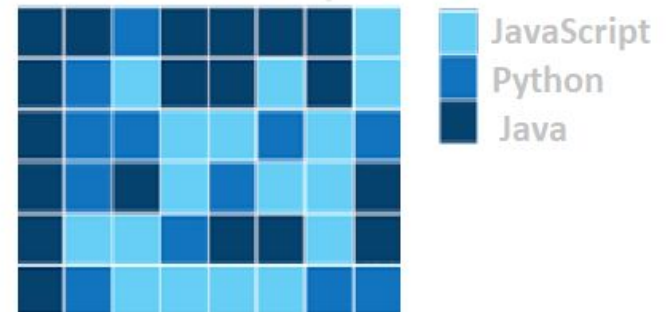
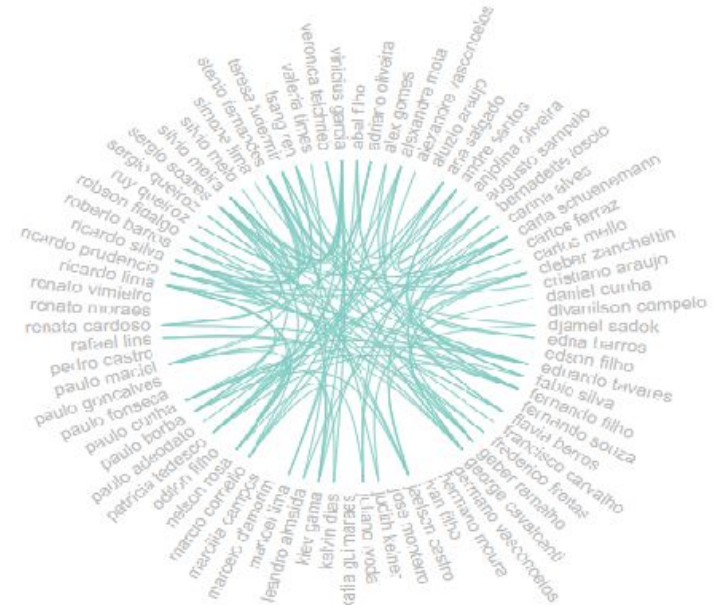
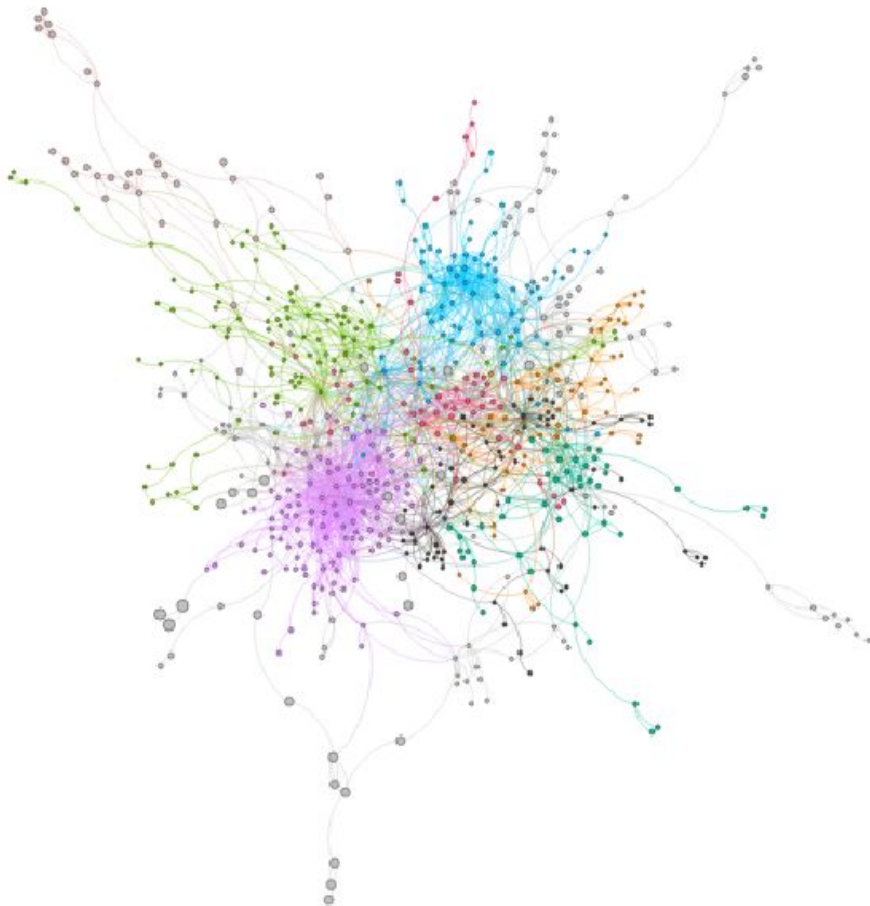


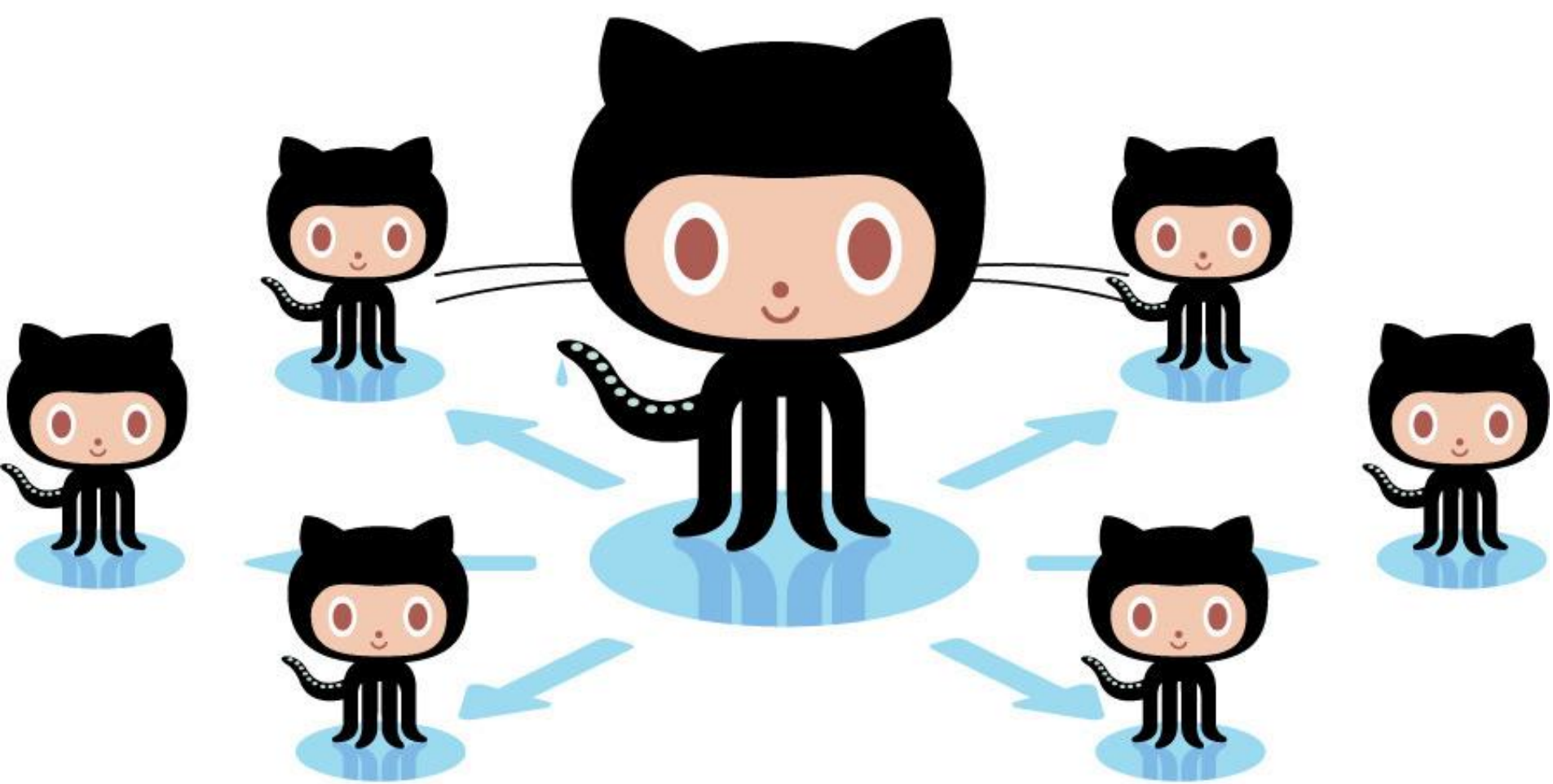


Análise de  
Comunidades



# + Visualização dos Dados





Obrigada

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