Twitter followers network with Python

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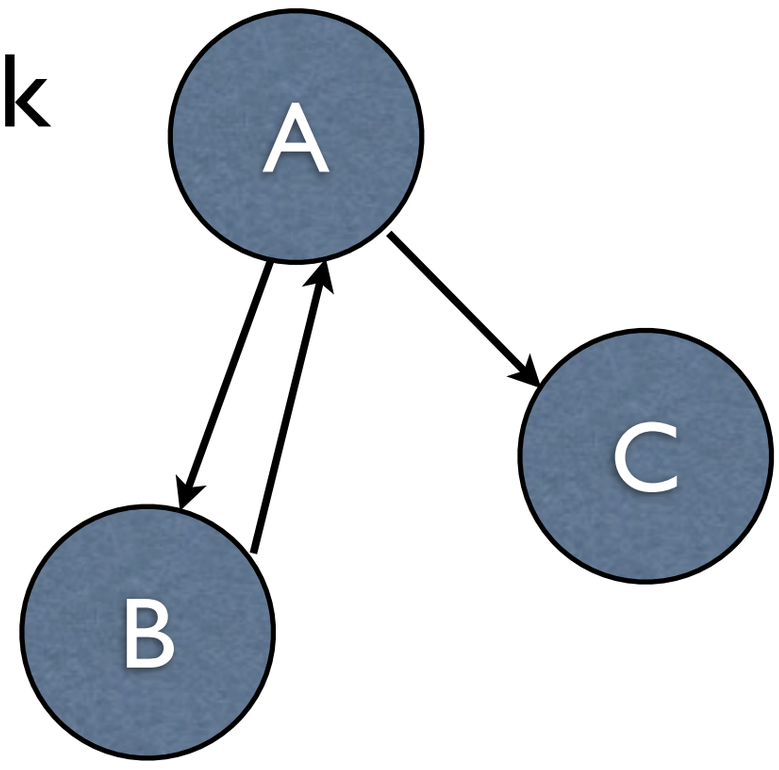
@Elmos_Buddy

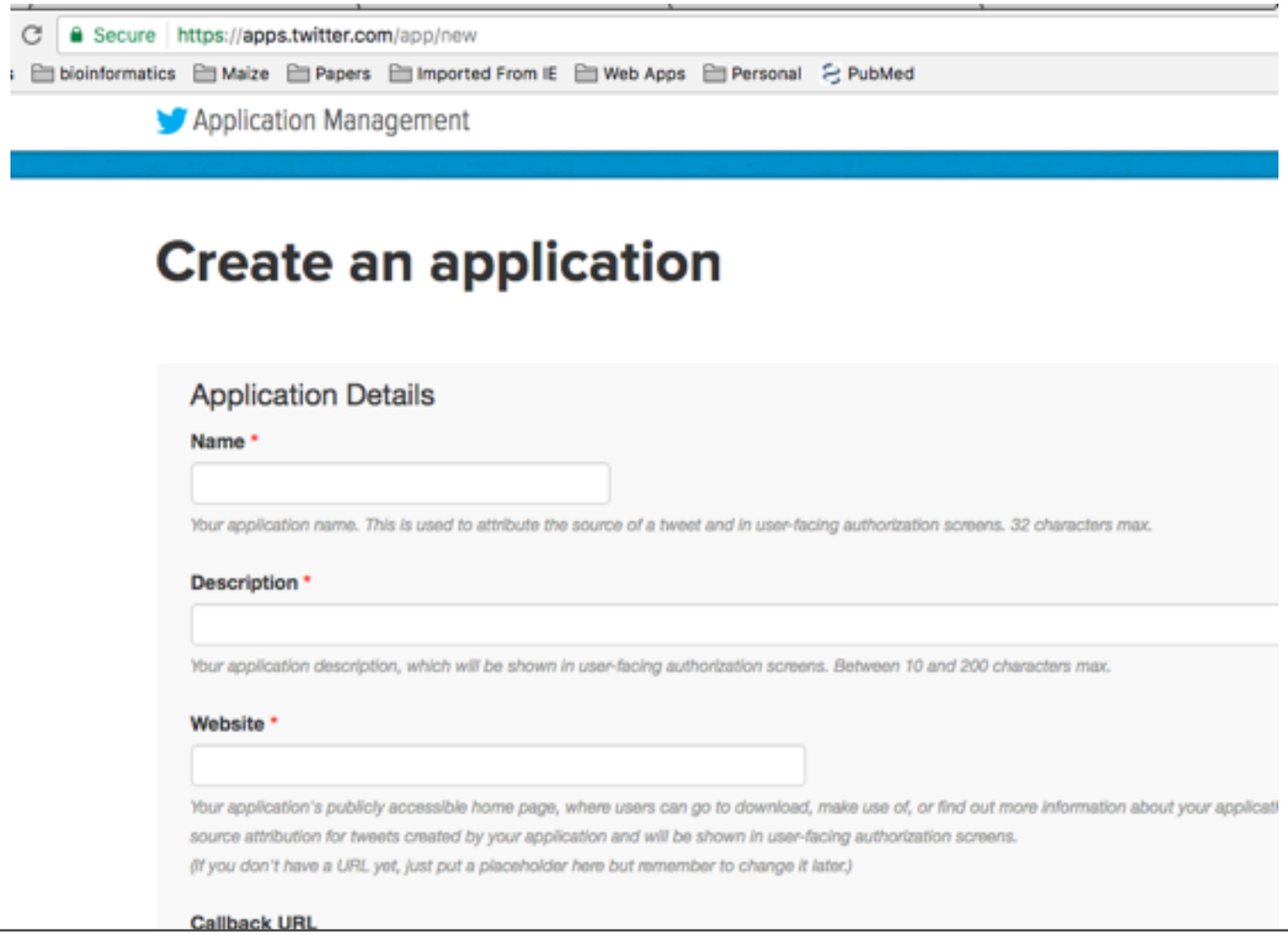
Making a network of people I'm connected to

- I'm going to download my twitter connections
- and make a picture of my connections
- as a directed network



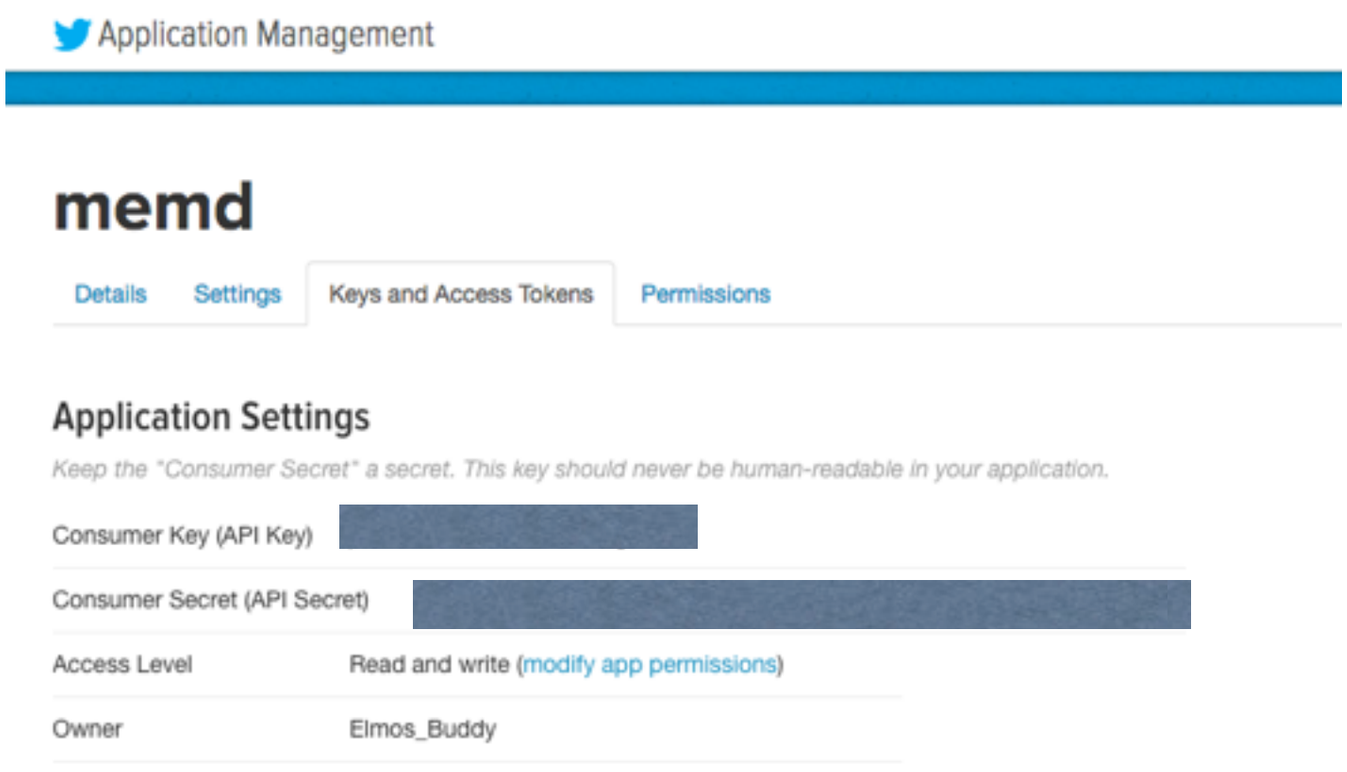
Step 1: Create a Twitter App

- dev.twitter.com
- apps.twitter.com



Step 2: Get keys

- See https://python-twitter.readthedocs.io/en/latest/getting_started.html
- i copied my keys to a file in json format just because :)



Step 3: Install twitter and networkx

- pip install twitter
  - https://github.com/bear/python-twitter
  - https://python-twitter.readthedocs.io/en/latest/
- pip install networkx
  - http://networkx.github.io/

Step 4: Write some Python

- import libraries and connect to the API

```
import twitter
import networkx
import matplotlib
matplotlib.use('Agg')
import matplotlib.pyplot
import json

with open("keys.json",'r') as f:
    mykeys=json.load(f)

api = twitter.Api(consumer_key=mykeys['consumer_key'],
    consumer_secret=mykeys['consumer_secret'],
    access_token_key=mykeys['access_token_key'],
    access_token_secret=mykeys['access_token_secret'])
```

....more python

- Retrieve connections

```
# get who I'm following
friends = api.GetFriends()
fto = set([item.screen_name for item in friends])

# get who is following me
followers = api.GetFollowers()
ffrom = set([item.screen_name for item in followers])

# common
both = fto & ffrom
```

...and some more

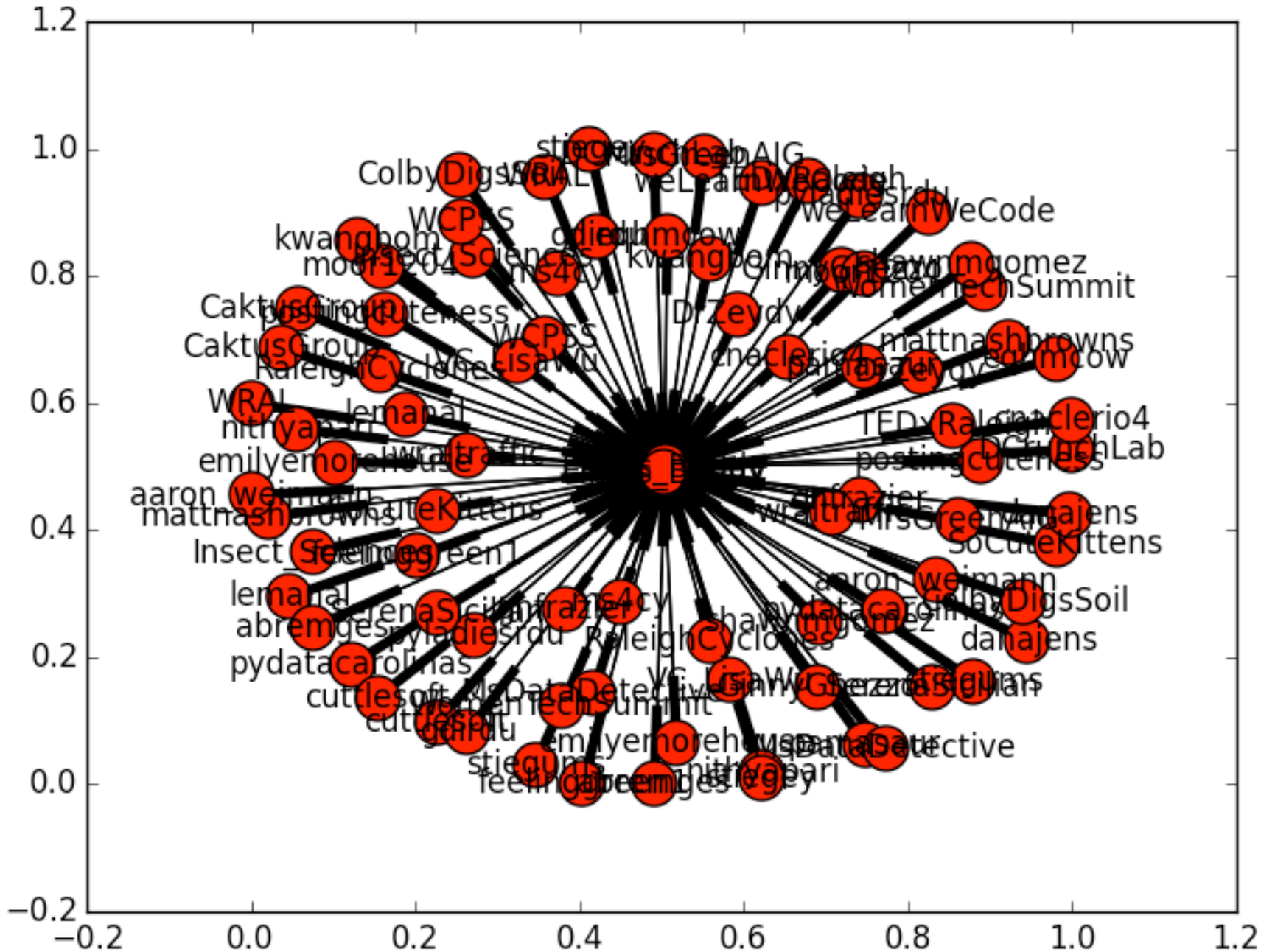
- Make network connections. Here I'm creating a network of people I follow who follow me back

```
# make a directed graph
g = networkx.DiGraph()

for f in both:
    g.add_edge("Elmos_Buddy",f)
    g.add_edge(f, "Elmos_Buddy")
```

- Draw it with matplotlib and/or save it

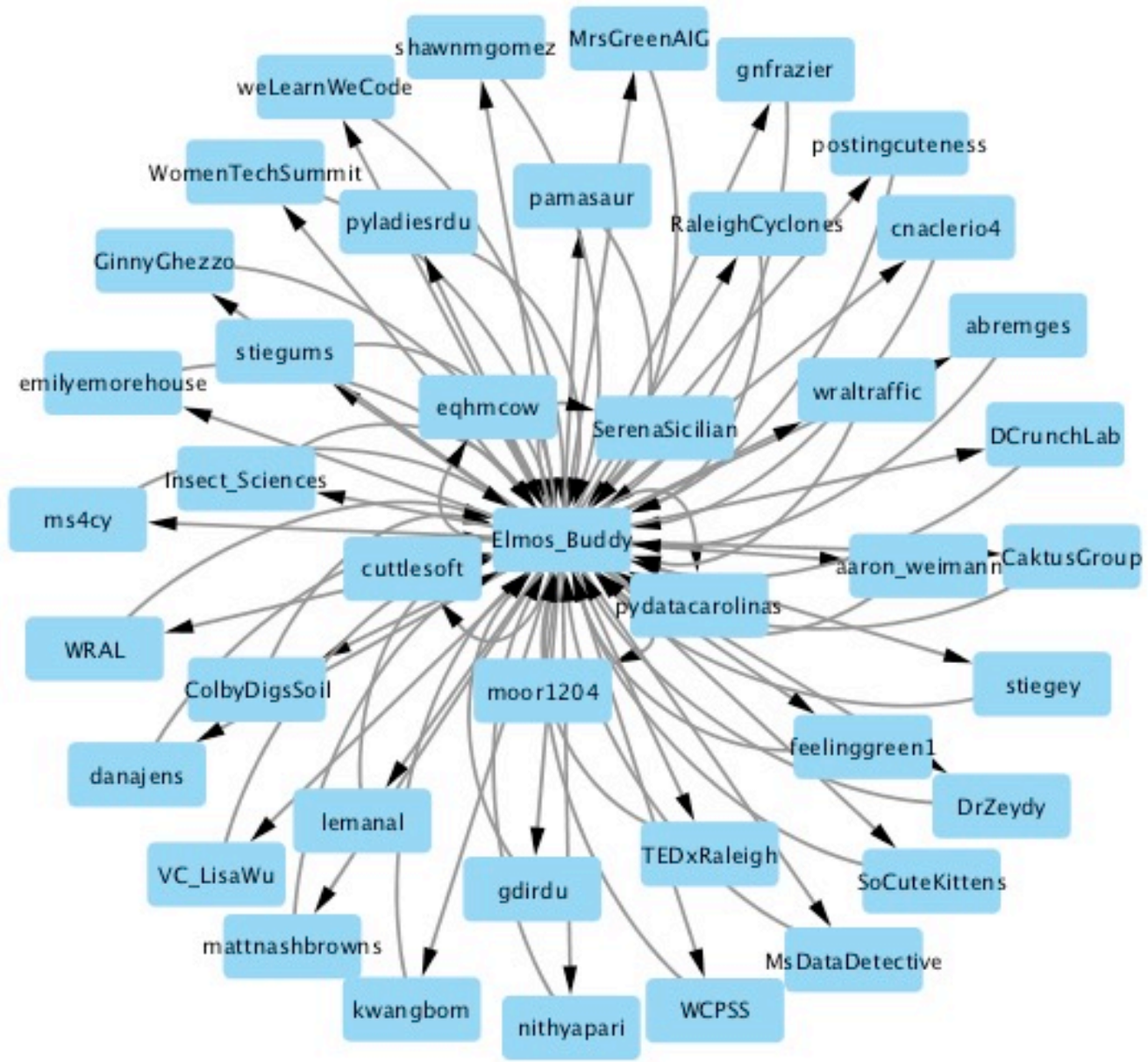
```
networkx.draw_networkx(g)
matplotlib.pyplot.savefig("friend.png")
matplotlib.pyplot.close()

networkx.write_gml(g,"friends.gml")
```

Networkx is not the best for visualizing graphs



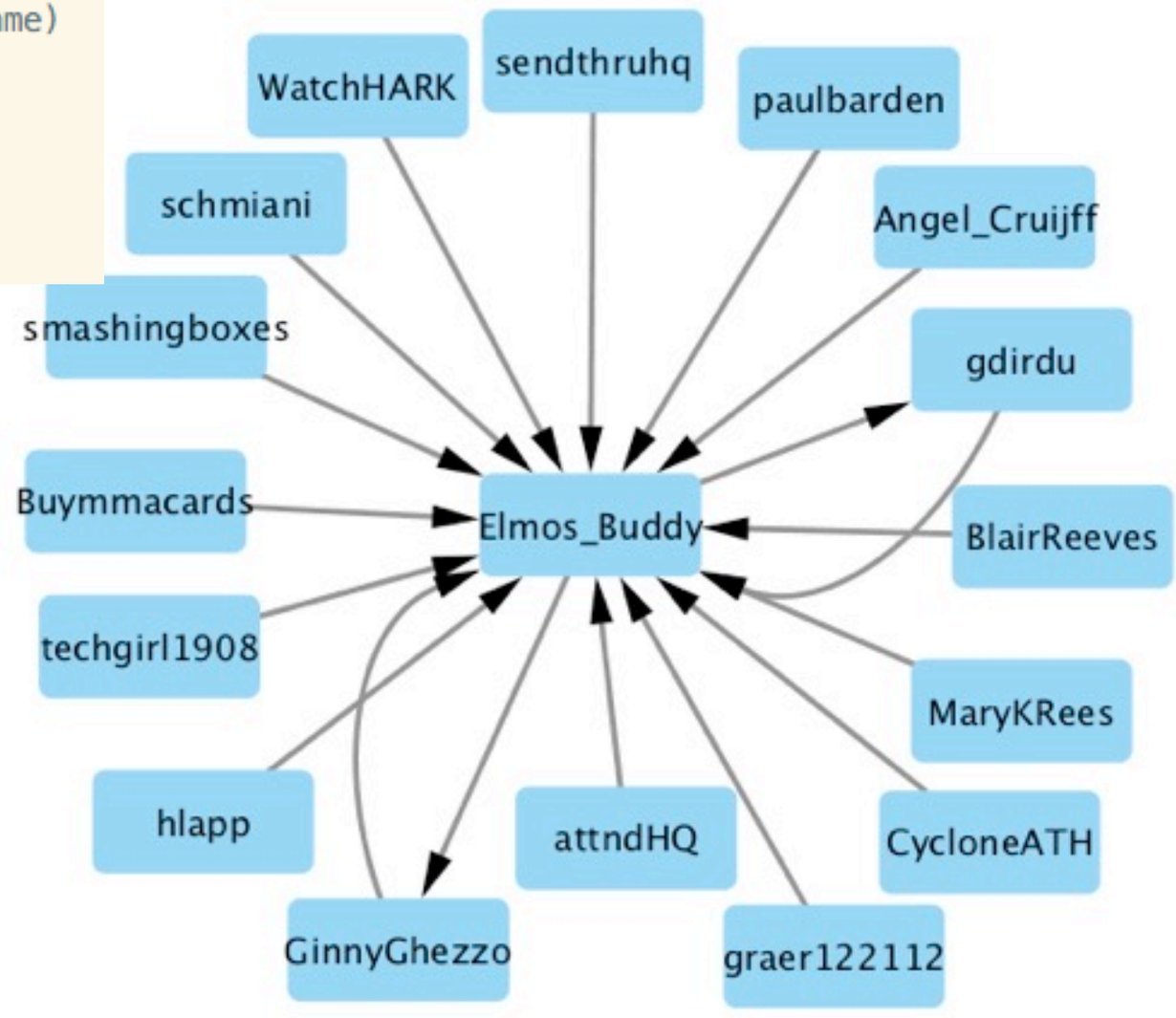
Visualize with something else

- Drawn with cytoscape, www.cytoscape.org



Something extra: Who retweeted a tweet?

```
g2 = networkx.DiGraph()
# tweets that were retweeted
rt=api.GetRetweetsOfMe()
for item in rt:
    # who retweeted the tweet
    lrt = api.GetRetweets(item.id)
    for tweets in lrt:
        if tweets.user.screen_name not in g2.node:
            g2.add_edge(tweets.user.screen_name, "Elmos_Buddy")
            if tweets.user.screen_name in both:
                g2.add_edge("Elmos_Buddy", tweets.user.screen_name)
        print(tweets.user.screen_name)

networkx.draw_networkx(g2)
matplotlib.pyplot.savefig("retweet.png")
networkx.write_gml(g2, "retweet.gml")
```



What else can you do with networkx?

- Save attributes to nodes and edges
- Many standard graph algorithms
  - Find paths between nodes
- ....
- Active open source project, http://networkx.github.io/

Links again

- Demo and presentation:
  https://github.com/drsuuzzz/elmo
- Summary of links
  - Twitter docs/API:
    - dev.twitter.com
    - apps.twitter.com
  - Python libraries:
    - https://github.com/bear/python-twitter
    - https://python-twitter.readthedocs.io/en/latest/
    - http://networkx.github.io/