

# ITP UNIVERSE

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December 4th, 2014

Social Data Analysis Final Presentation

# In the quest for...

Making sense out of ITP (through its API).

Hypothesis:

Courses' descriptions can help us learn about the relationship among ITP courses and about ITP as whole (most popular and relevant topics).

# Ideal visual output:

A set of courses, each of them revolving around specific themes.

# Dataset:

## ITP courses

Total: 394

(387 unique)

```
for i in year_courses_dict:  
    print i, len(year_courses_dict[i])
```

```
2002 1  
2003 0  
2004 2  
2005 15  
2006 15  
2007 34  
2008 22  
2009 38  
2010 35  
2011 37  
2012 40  
2013 45  
2014 110
```

```

},
- 668: {
  description: "Data are created and collected all around us, trails left from our interactions in social networks, accessible through streams, feeds, APIs and data-stores. A useful way to make sense of these tangle of connections, posts and interactions is by looking at it through the lens of networks. Network graphs are mathematical structures used to model relations between objects, and are incredibly helpful when working with social data. In this class we will get familiar with tools, methods and data-streams that come in handy when analyzing information from social networks. We will be using python scripts to access data from APIs of services such as Twitter and Instagram, learn about various types of data-bases which we will come in handy when aggregating our data, and finally work on ways to make sense of it. We will touch on topics such as natural language processing, classification, authority ranking and clustering, and will use a number of open source tools, including Gephi. Throughout the semester there will be a mix of individual and group projects. We will predominantly be using the Python programming language to access, index and manipulate data. A number of Code Academy Python tutorials will be assigned as a pre-requisite for those with little to no python experience. ",
  title: "Social Data Analysis",
  url: "",
  course_number: "ITPG-GT.2649",
  course_id: "668",
- sections: {
  - 3705: {
    - students: [
      "jy1415",
      "kw1213",
      "nss274",
      "js4424",
      "mjs908",
      "jjo298",
      "jff2813",
      "bgc240",
      "jnc331"
    ],
    semester: "Fall",
    call_number: "21243",
    year: 2014,
    url: "",
  - instructors: [
      "0",
      "gl637"
    ],
    section_id: "3705",
    section_number: 1
  }
}
},

```

## Dataset JSON-Schema

```
},
```

```
- 668: {
```

```
description: "Data are created and collected all around us, trails left from our interactions in social networks, accessible through streams, feeds, APIs and data-stores. A useful way to make sense of these tangle of connections, posts and interactions is by looking at it through the lens of networks. Network graphs are mathematical structures used to model relations between objects, and are incredibly helpful when working with social data. In this class we will get familiar with tools, methods and data-streams that come in handy when analyzing information from social networks. We will be using python scripts to access data from APIs of services such as Twitter and Instagram, learn about various types of data-bases which we will come in handy when aggregating our data, and finally work on ways to make sense of it. We will touch on topics such as natural language processing, classification, authority ranking and clustering, and will use a number of open source tools, including Gephi. Throughout the semester there will be a mix of individual and group projects. We will predominantly be using the Python programming language to access, index and manipulate data. A number of Code Academy Python tutorials will be assigned as a pre-requisite for those with little to no python experience. ",
```

```
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```

```
url: "",
```

```
course_number: "ITPG-GT.2649",
```

```
course_id: "668",
```

```
- sections: {
```

```
- 3705: {
```

```
- students: [
```

```
"jy1415",
```

```
"kw1213",
```

```
"nss274",
```

```
"js4424",
```

```
"mjs908",
```

```
"jjo298",
```

```
"jff2813",
```

```
"bgc240",
```

```
"jnc331"
```

```
],
```

```
semester: "Fall",
```

```
call_number: "21243",
```

```
year: 2014,
```

```
url: "",
```

```
- instructors: [
```

```
"0",
```

```
"gl637"
```

```
],
```

```
section_id: "3705",
```

```
section_number: 1
```

```
}
```

```
}
```

```
},
```

Information that I needed

# Graph construction:

```
# cleaning the description

stub = re.compile('[^A-Za-z]')

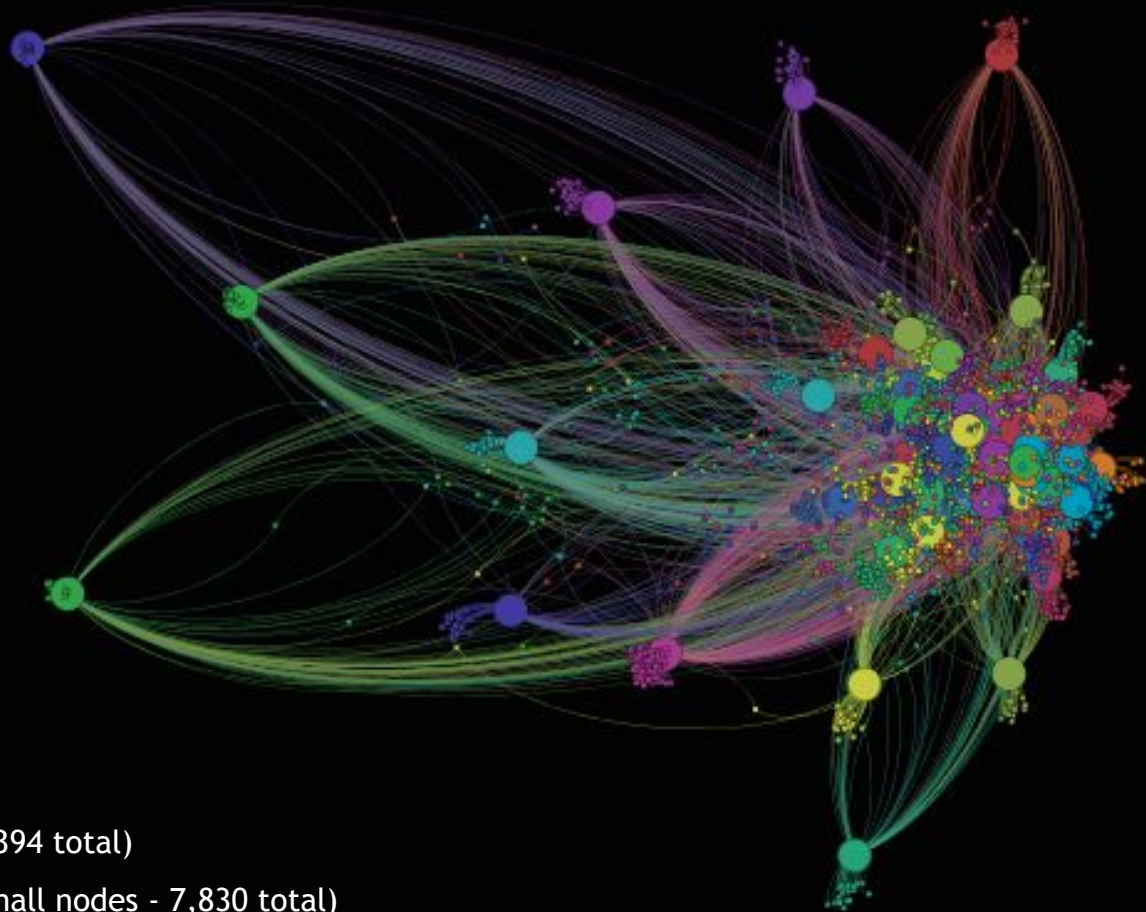
for i in range(len(description)):
    for d in description[i]:
        w = stub.sub('',d)
        if len(w)<3:
            continue
        if d.startswith("<"):
            continue
        if d.startswith("href"):
            continue
        if d.startswith('http'):
            continue
        if w in stopwords.words('english'):
            continue
        t_description[i].append(w)
```

```
print graph.number_of_nodes()
print graph.number_of_edges()
```

```
8230
35261
```

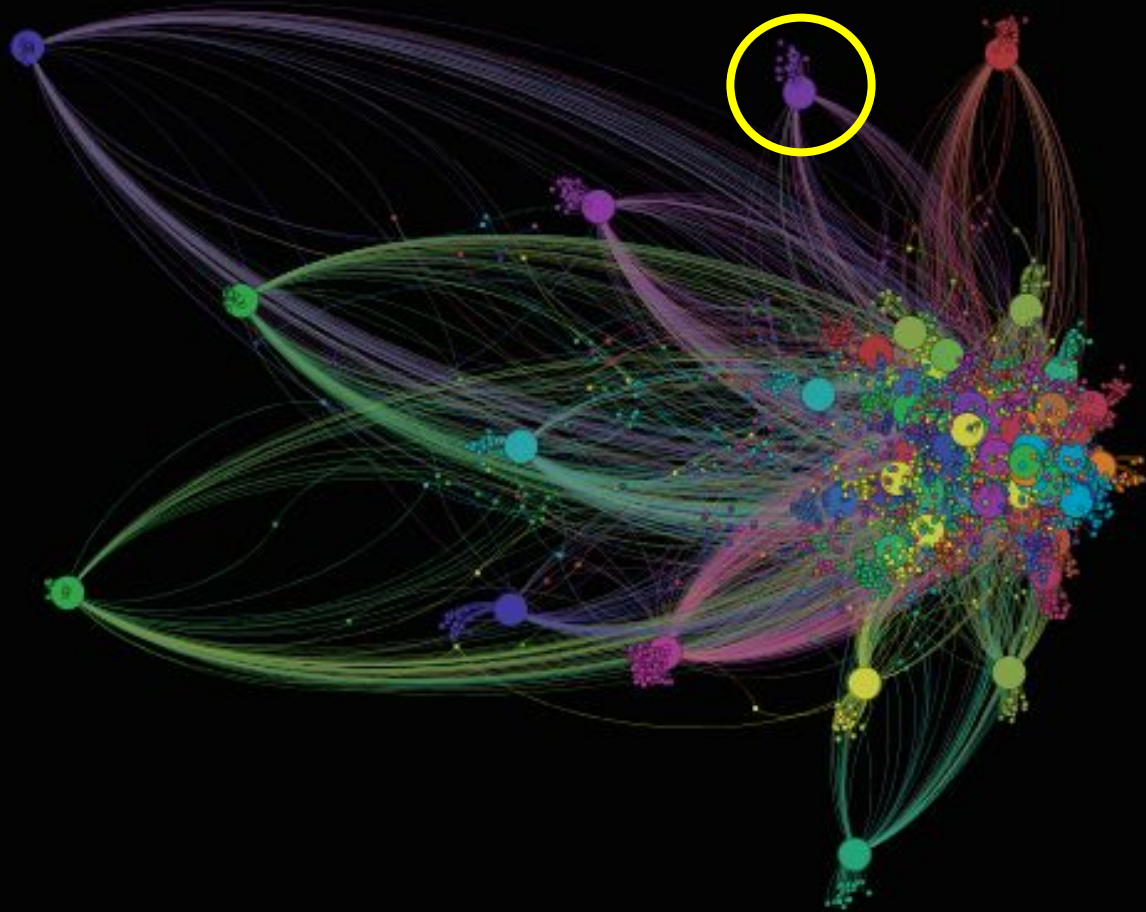
A long time ago in a galaxy far,  
far away....





Courses (big nodes - 394 total)

Descriptive words (small nodes - 7,830 total)



# Tech Crafts



reactive

softer

unusual

embedding

conductive

constructions

wires

tapes

cements

laying

drinks

ink

vegetables

handling

crafts

paints

glues

illumination

bends

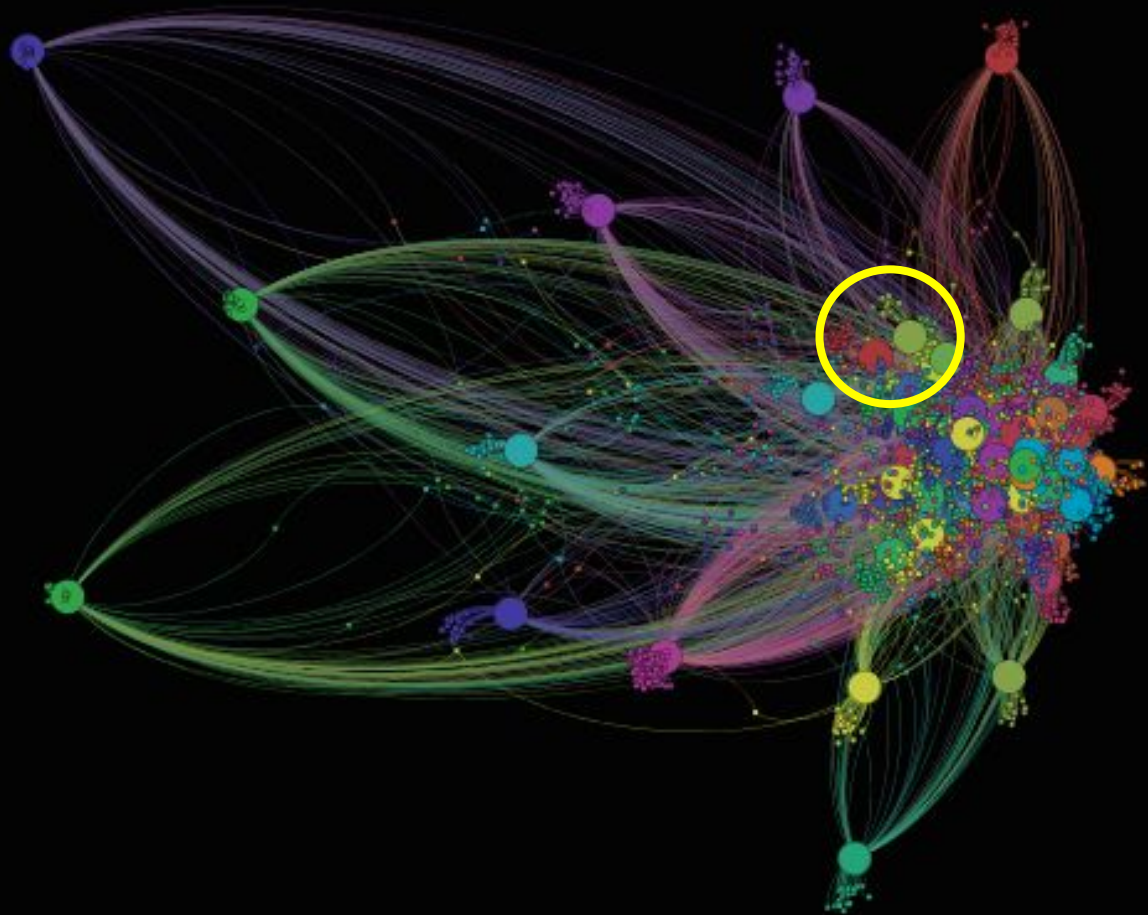
electrotextiles

mundane

textile

prints

acetate

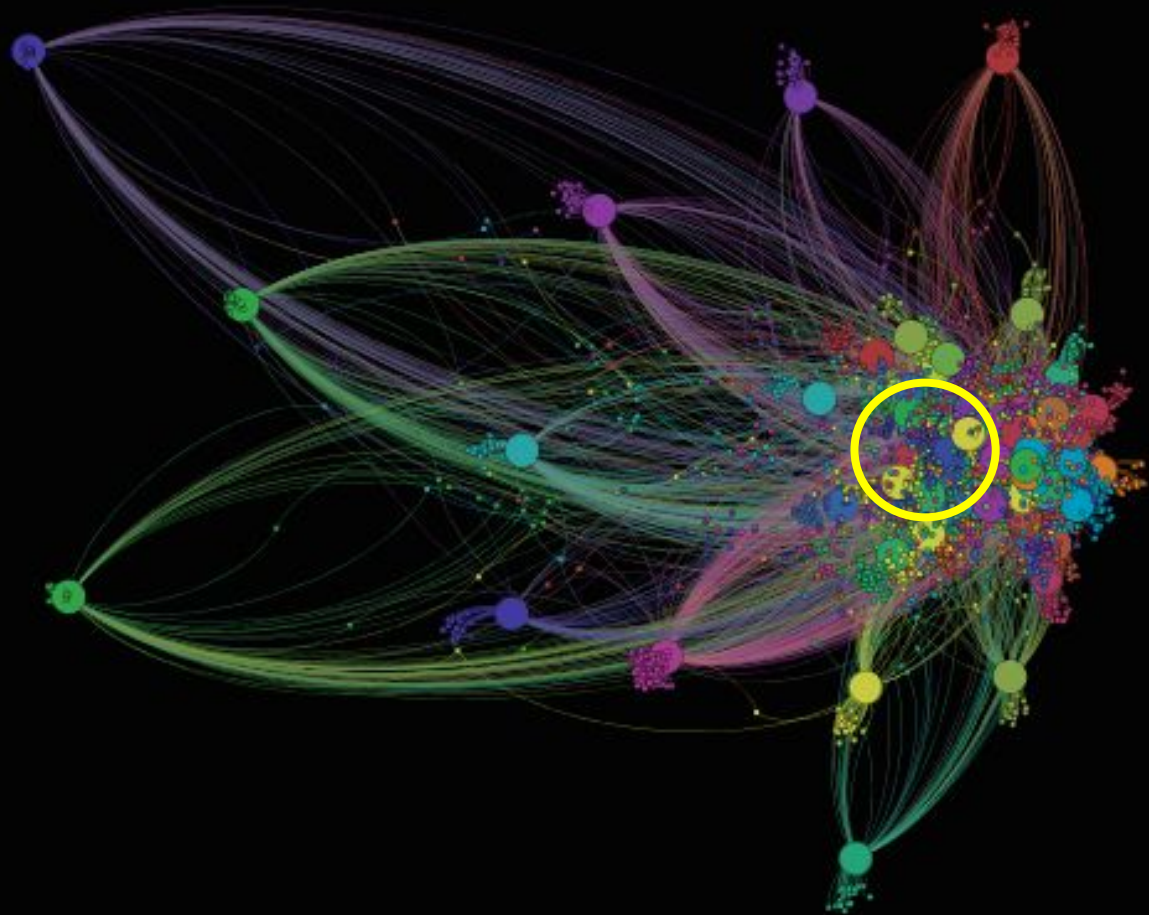




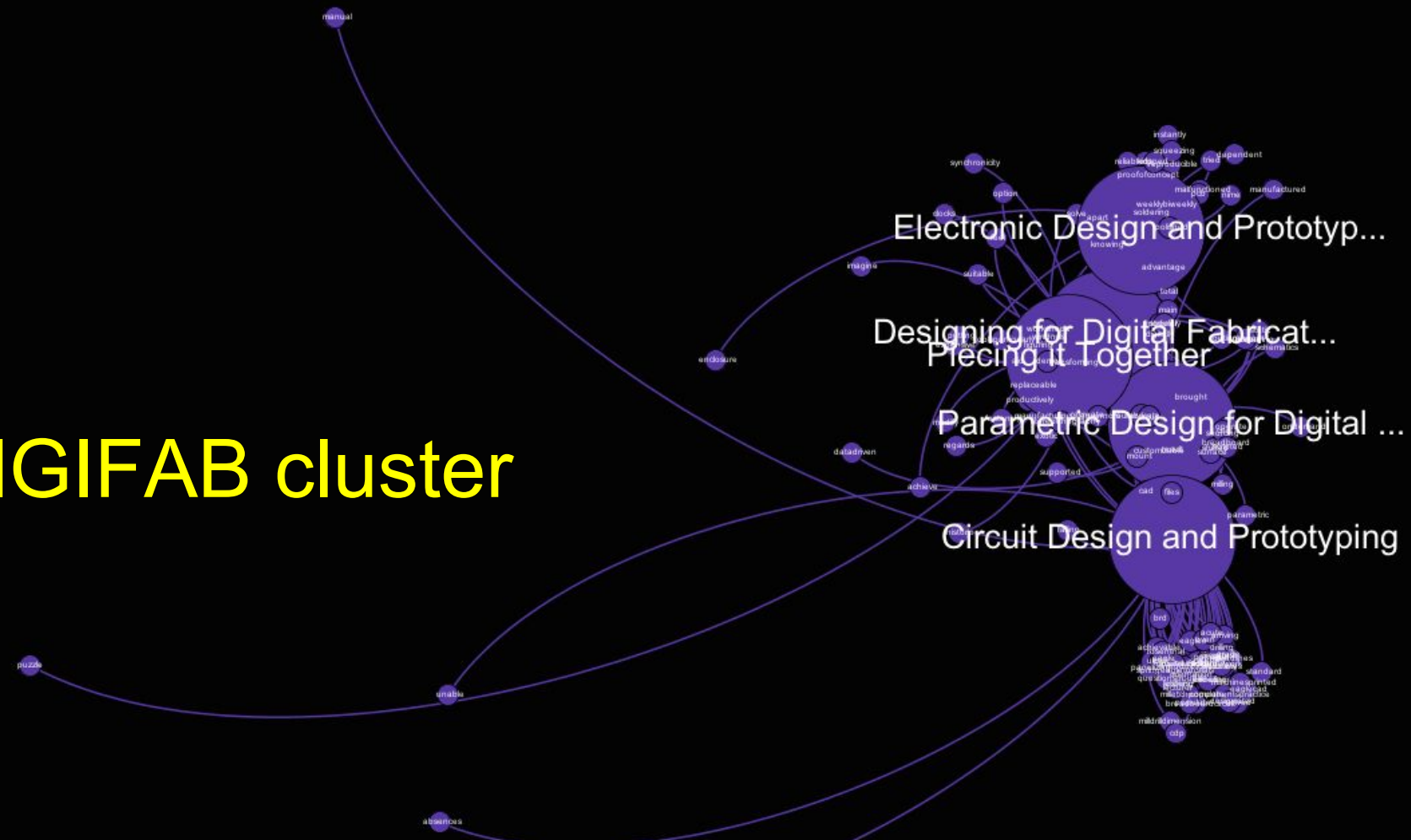


# Clusters

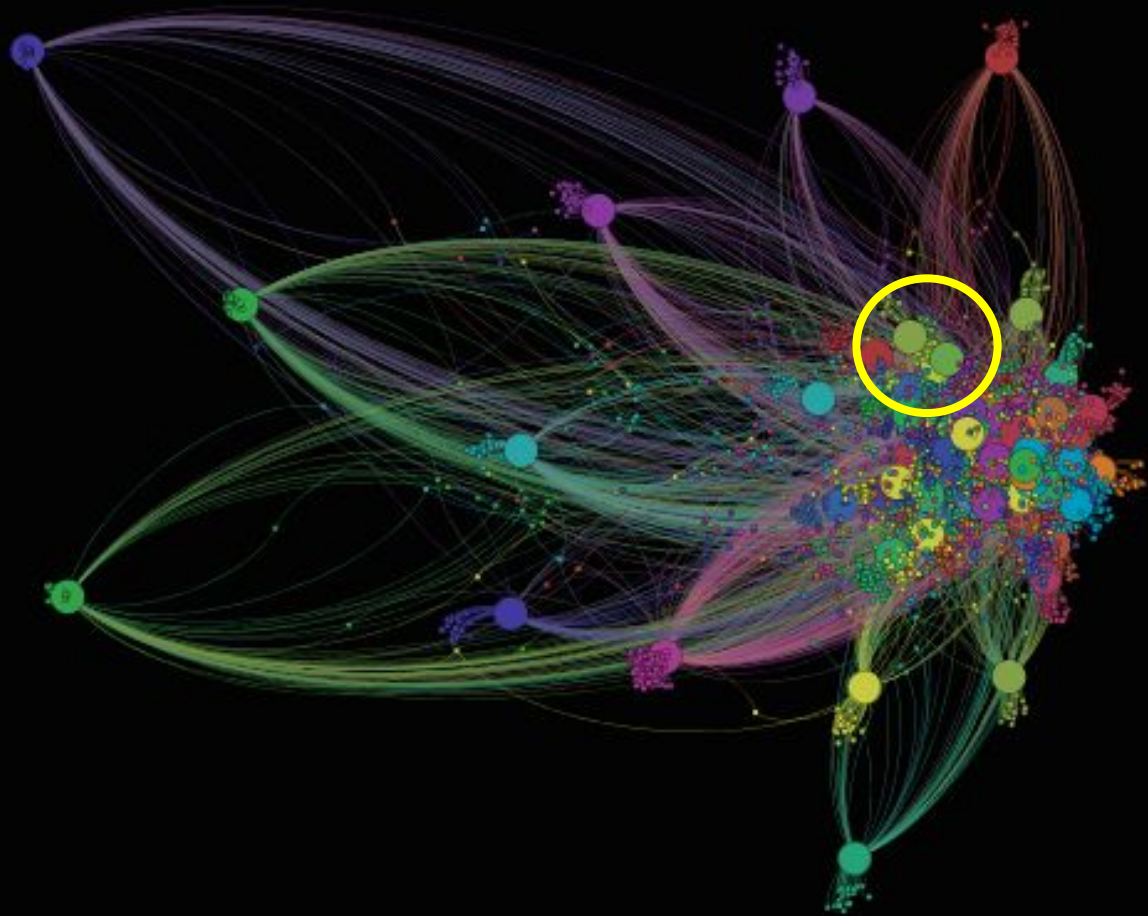




# DIGIFAB cluster



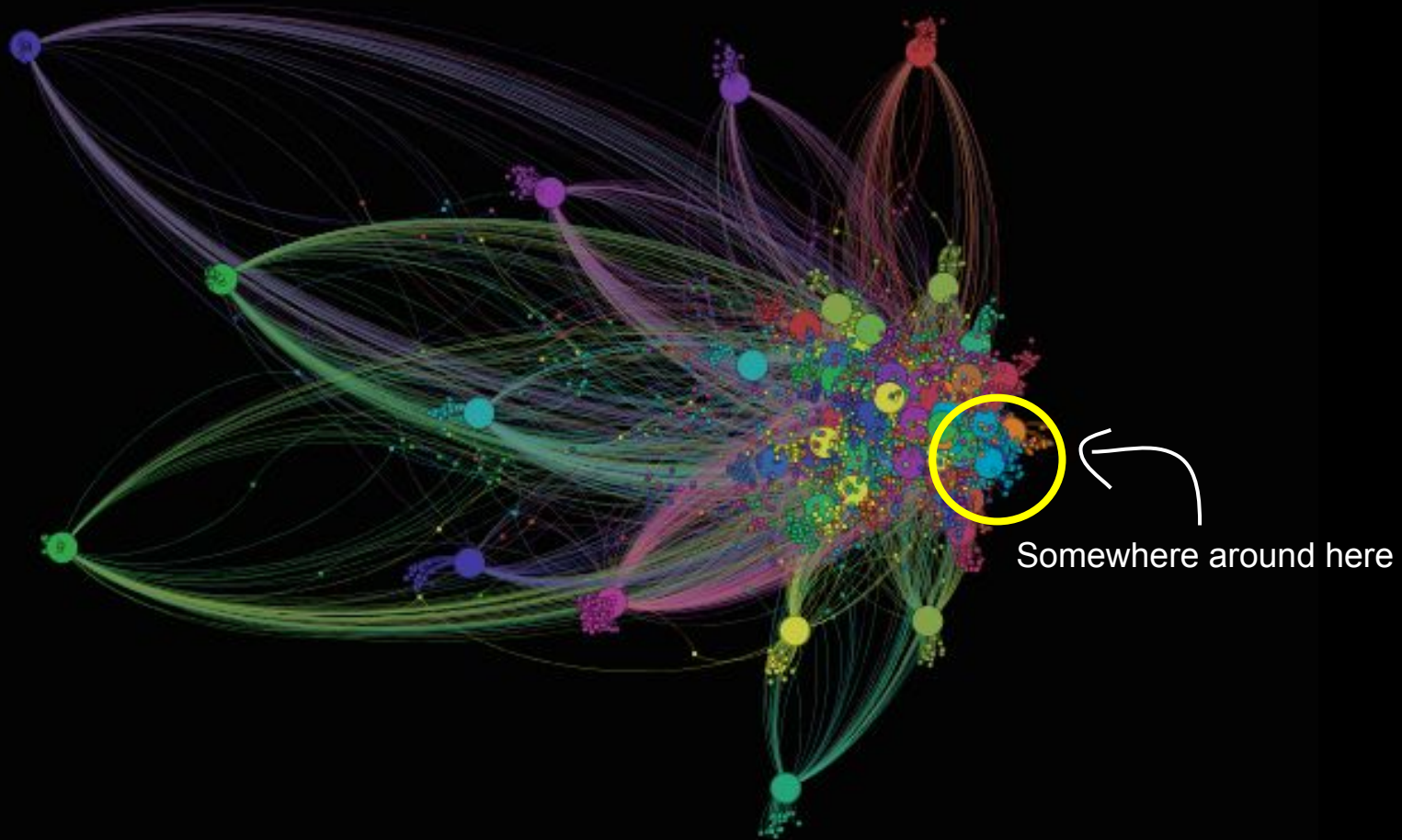




# Artsy cluster



Where is SDA?







In relation to:

Cloudcommuting: Rethinking Point-to-point Urban Mobility Systems

Basic Analog Circuits

The Temporary Expert: Research-based Art and Design Practice

Making Pop-Up Books and Paper Engineering Biomechanics for Interactive Design

Designing for Live Performance

Puppets and Performing Objects

Puppets and Performing Objects (2 credits)

Sustainable Practices

Solar Design for Development

Aesthetics of Automation

Affordable 3D Printing and Design

Social Data Analysis

Constructing Generative Systems

Evolution as a Creative Tool





Adiós!