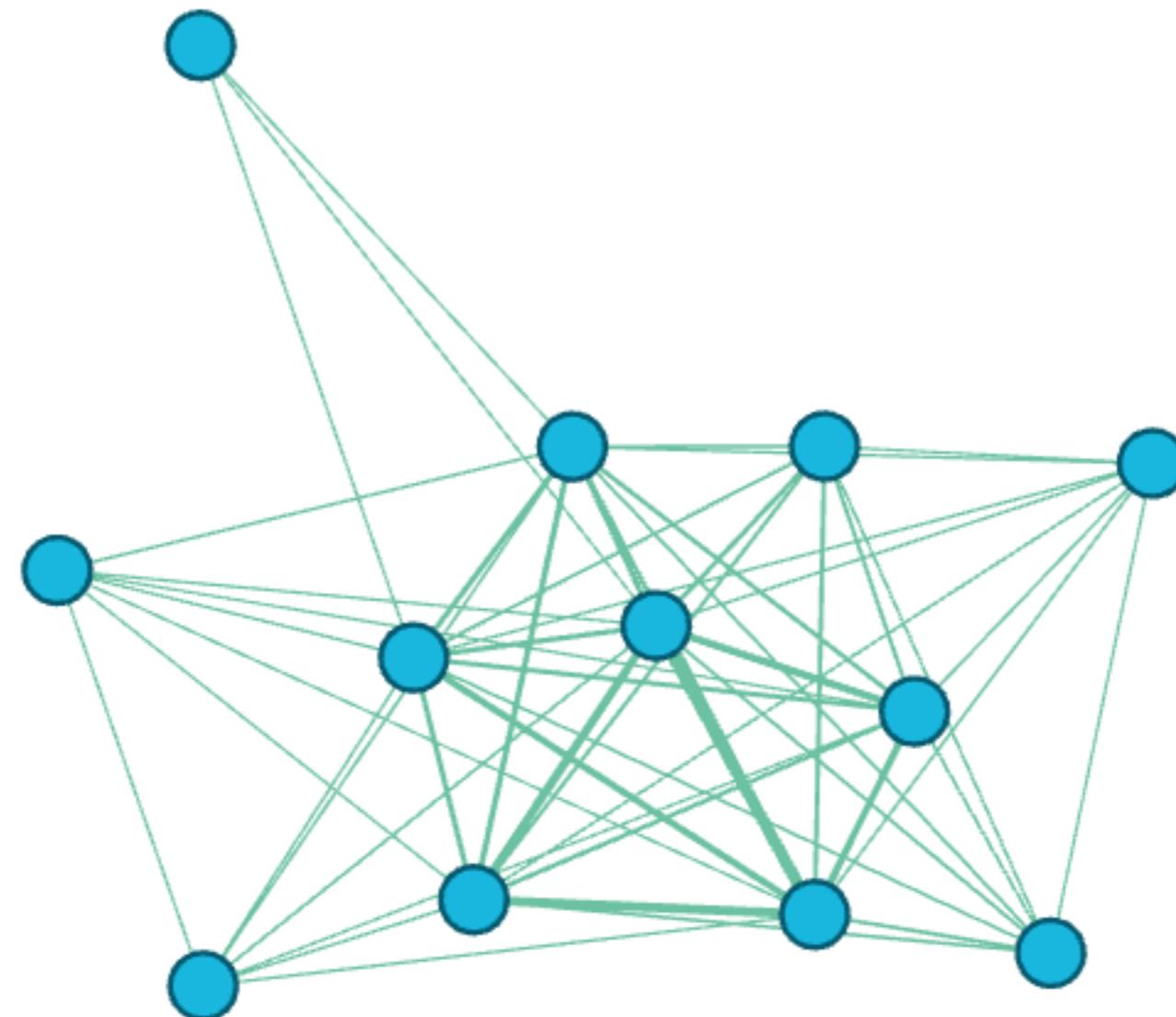


Community Detection on Meetup.Com

Filip Machi
galvanize@fil.fmachi.net
<https://github.com/nitecascade/solid-funicular>

A Social Network represents relationships or information flows between people, groups, organizations or other entities.

Often visualized as a Graph of Nodes and Edges.



WHY STUDY COMMUNITY IN SOCIAL NETWORKS?

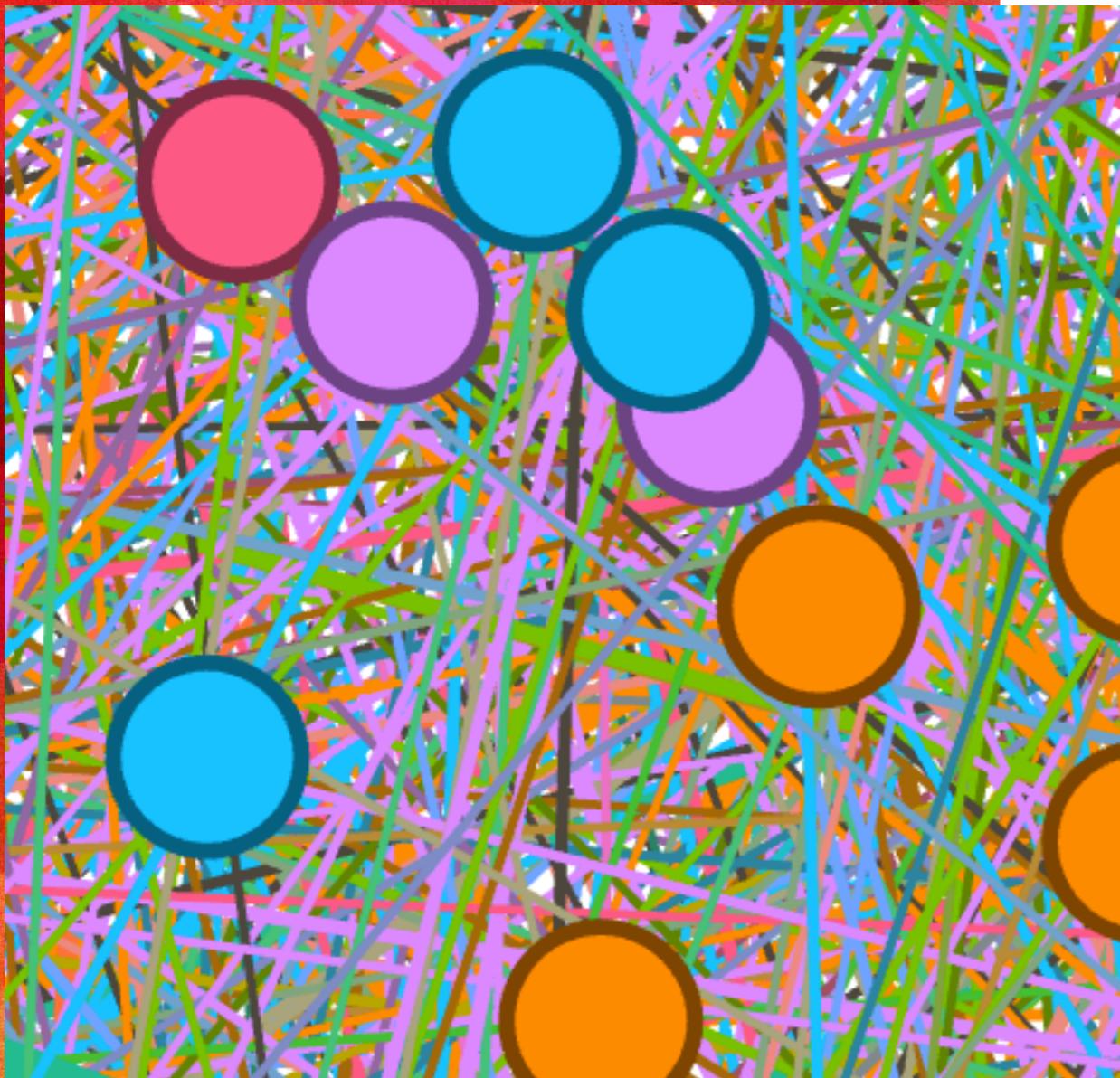
- Social networks are not random, they have **structure**, like **community** (common interests among people)
- There are **surprises** waiting to be uncovered

WHERE DID THE DATA COME FROM?

- *meetup.com API*
- *Python & bash*
- *5+ GB of JSON*
- *8200+ Groups*
- *7.3 + million Edges*

METHODOLOGY

- Build a big graph
- Nodes are Meetup groups
- Edges between groups mean groups have common members
- Look for dense areas in graph
(Louvain community detection algorithm)



What could go wrong?

- Downloading 5+ GB of JSON data takes a long time
 - Use a large AWS EC2 instance
- Graph is too big!!!
 - Use a faster algorithm (**Louvain Community Detection**)
- Visualization (Graph is too big again!!!)
 - Gephi** visualization software brings laptop to its knees.
 - Prune some edges, work on pieces of the graph separately.

Initial graph

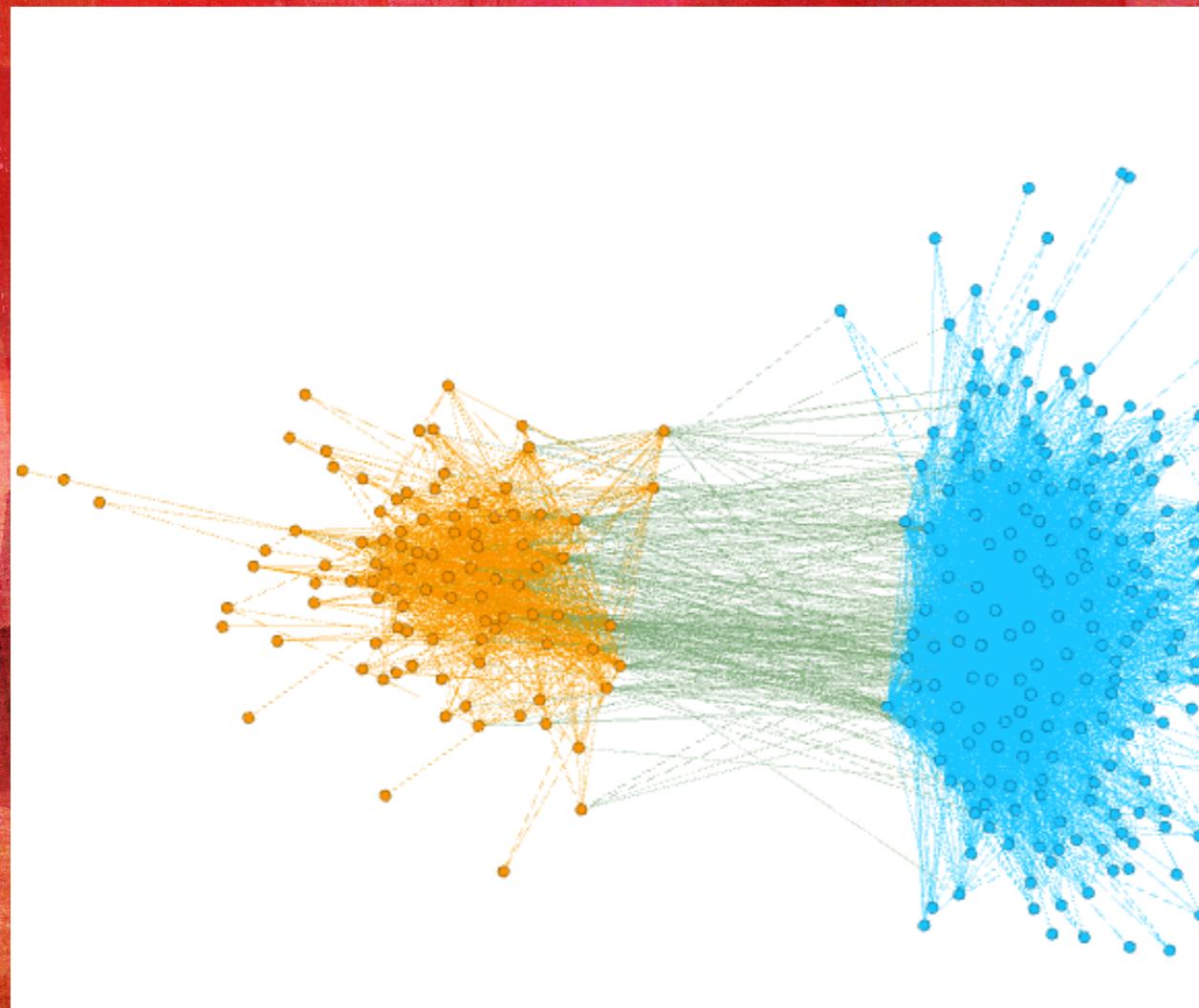
Communities

Layout complete

Layout begun

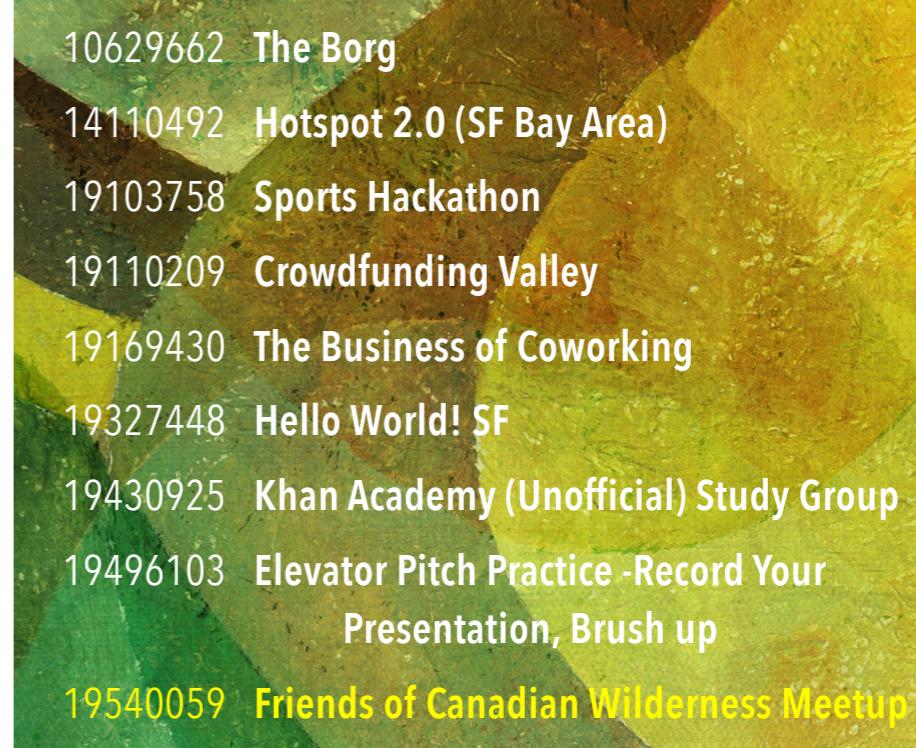


A SAMPLE COMMUNITY



- 13752232 Girl Gone International San Francisco
- 14709952 SF Bocce
- 1569779 20 and 30 somethings in San Francisco - AWESOME Stuff
- 1654112 San Francisco Women's Picnic Book Club--20s/30s
- 1724725 San Francisco Newbies in their 20s
- 1779069 Just Graduated College and Moved to Silicon Valley
- 1811226 The Antisocialites: Unique people in their 20-30s
- 18230756 New in town Girlfriends San Francisco
- 18575035 Great Girlfriends SF (30-40)
- 18860444 San Francisco Ladies' Brunch Meetup
- 18955438 SF Girlfriends in 20's and 30s
- 19119977 Just A Couple Couples In The City
- 19506096 San Francisco 20-Somethings Women's Cookie Club
- 19646457 Double Date!
- 19924434 San Francisco Young Professional Travelers
- 3167582 San Francisco Random Adventurers 20s-30s
- 4202882 HUMANRACE
- 5379582 Good times w/ Wine & Girlfriends 20s & 30s
- 6453932 Going Out Girls in San Francisco! 20s-30s
- 6978792 New In The City
- 7647082 Marina Young Women's Cooking Club
- 7739722 San Francisco DINKs: Fun Childfree Couples in 30s and 40s
- 8644732 SF Movies, Happy Hours and Fun!
- 9845002 Happy Hour & Networking San Fran
- 9996132 Good Times w/International Girlfriends

- 
- 10185432 Marin County Euchre group (card game)
 - 10316592 Never Too Late To Have a Happy Childhood even for grown ones
 - 10620852 Tech in Marin
 - 1066931 Marin Moonshiners Hike & Picnic
 - 13051522 Sausalito 20-40's Sail Ski Social Meetup
 - 13120312 Novato Cohousing Now Meetup
 - 13621192 Marin Acoustic Guitar Group
 - 13833032 Concord Wiki - All About Our City, Written by Our City
 - 1420856 Got Wind and Water ...
 - 14357862 Quest Hiking Group
 - 1458833 Carl Jung and Active Imagination
 - 15248952 Point Reyes Station Ukulele meetup - 2nd Sunday
 - 1553353 The Graceful Power of The Consciousness
 - 1568840 Marin Meditation and Conversation Meetup
 - 1591091 North Bay Mobile Drive-In
 - 1594076 Kayakers' Alliance

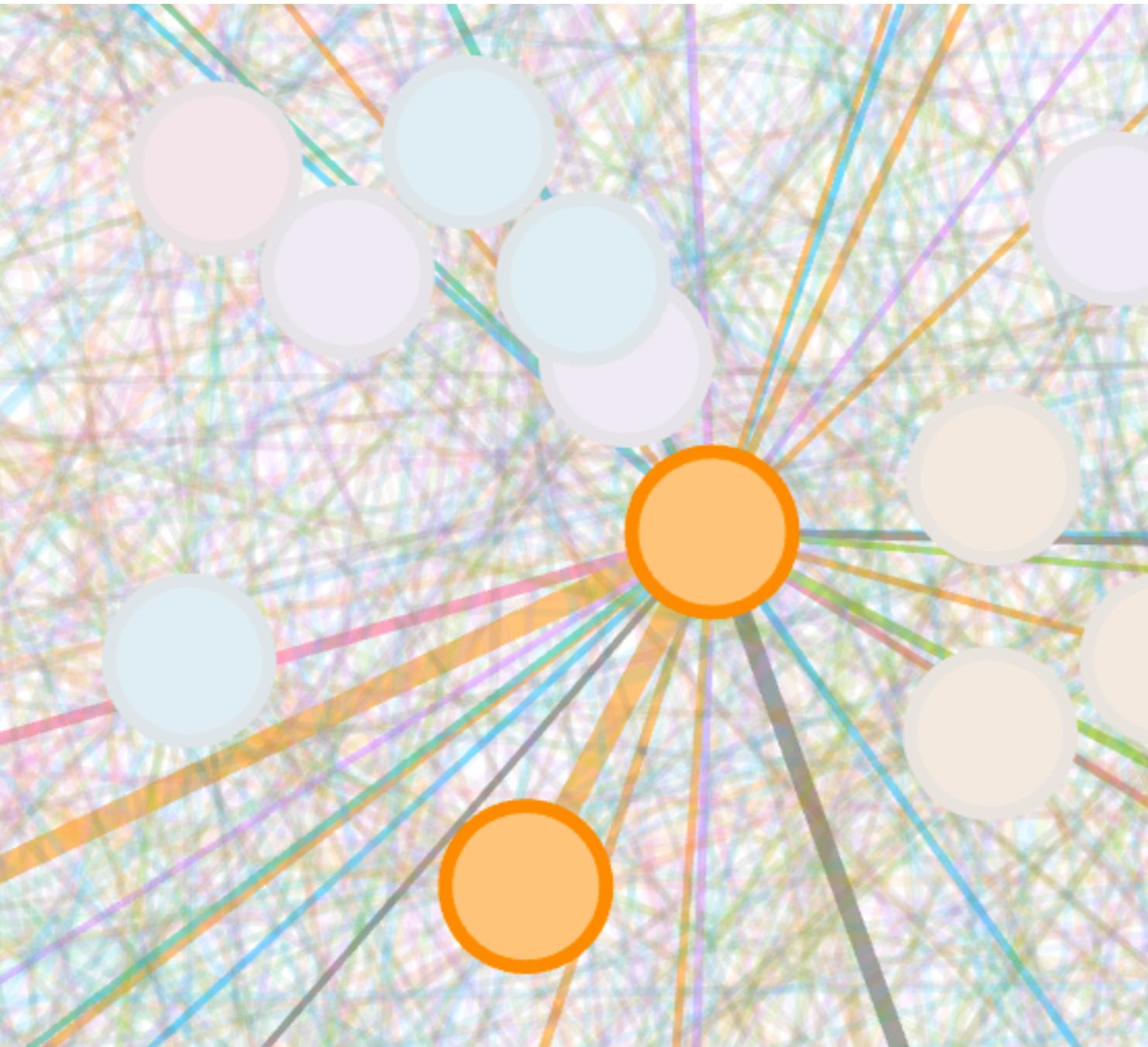
- 
- 10629662 The Borg
 - 14110492 Hotspot 2.0 (SF Bay Area)
 - 19103758 Sports Hackathon
 - 19110209 Crowdfunding Valley
 - 19169430 The Business of Coworking
 - 19327448 Hello World! SF
 - 19430925 Khan Academy (Unofficial) Study Group
 - 19496103 Elevator Pitch Practice -Record Your Presentation, Brush up
 - 19540059 Friends of Canadian Wilderness Meetup

- 
- 1082686 An Alternative to Dating as Usual
 - 1225656 Decriminalize Prostitution!
 - 12776342 OneTaste East Bay
 - 12790222 Real Pleasure Marin
 - 13638892 Cougar Parties & Cruises
 - 1504976 Date Me, If You Dare
 - 1614811 Tantra with Moneeka
 - 1682003 Sequoians Nudist Park, Castro Valley Ca.

Get a sense of where your neighbors are going.

FUTURE DIRECTIONS

- App to browse Meetup groups
- Jumpstart a Meetup Recommender
- Sniff out the social heartbeats of an area
- Stretch yourself in ways you would not have imagined



QUESTIONS?

- 11276052 Crowd-tasting: Whisky and other spirits [SF]
- 1128669 Happy Hour Club
- 1271344 New York Giants Fans Unite in San Fran
- 1326081 The San Francisco Live Indie Music Group
- 1342563 Mission Dive Bars
- 1506076 The NY Yankees Unite in SF
- 1547183 Women who like Beer
- 1683009 Chicago Sports Fans in the Bay Area
- 1714061 San Francisco Chicago Bears Fans -Bear Down!!
- 1733916 Bay area Hockey fans!
- 1750312 San Francisco Homebrewers Guild
- 1761523 San Francisco Fighting Illini Sports Fans
- 17705802 San Francisco Notre Dame Football Meetup
- 18219976 Sirwisa Brewing Collective
- 18397603 San Francisco Scotch and Whisk(e)y Meetup
- 18522920 SF Bourbon
- 18887862 Alcohol Alchemy - Learn. Make. Share.
- 20082043 Rose Kingz Mens Basketball Tournament
- 5847432 SF Young Professional Canadian Expats
- 901849 Bay Area Beer Socials