

Social network analysis

Eugene Gostkin

Network summary

40 connectivity components

37 - only one vertex

1 - two vertices, 1 - three

The biggest one - 793

Radius: 5

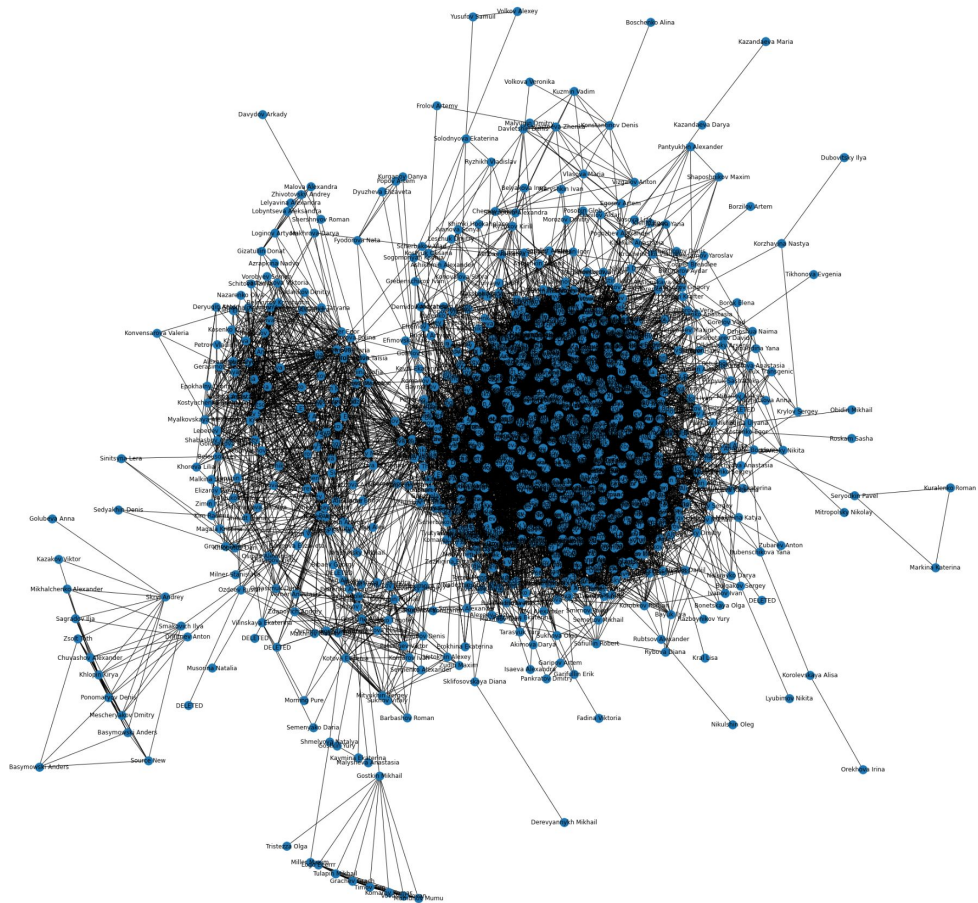
Diameter: 10

Average shortest path length:

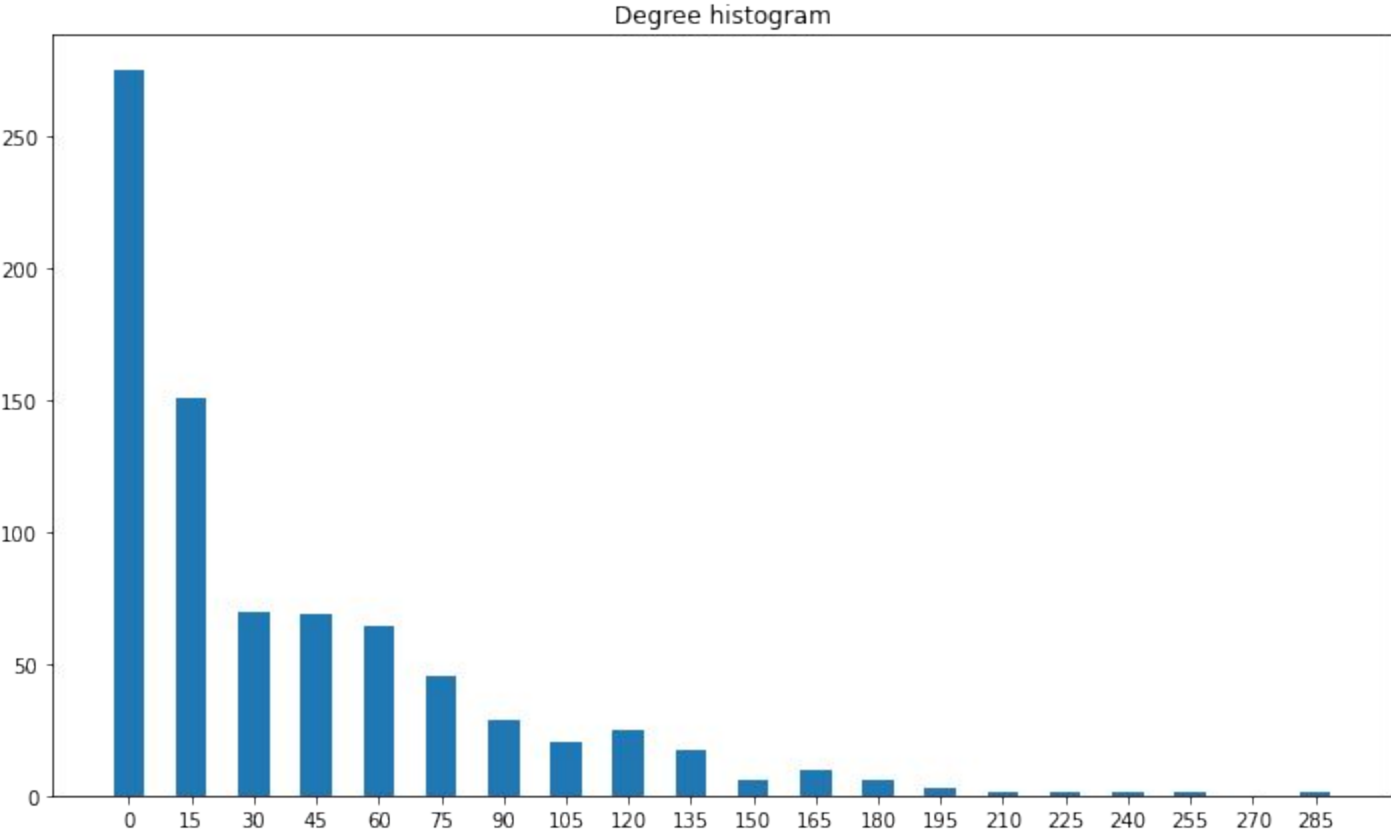
2.958481

Average clustering coefficient:

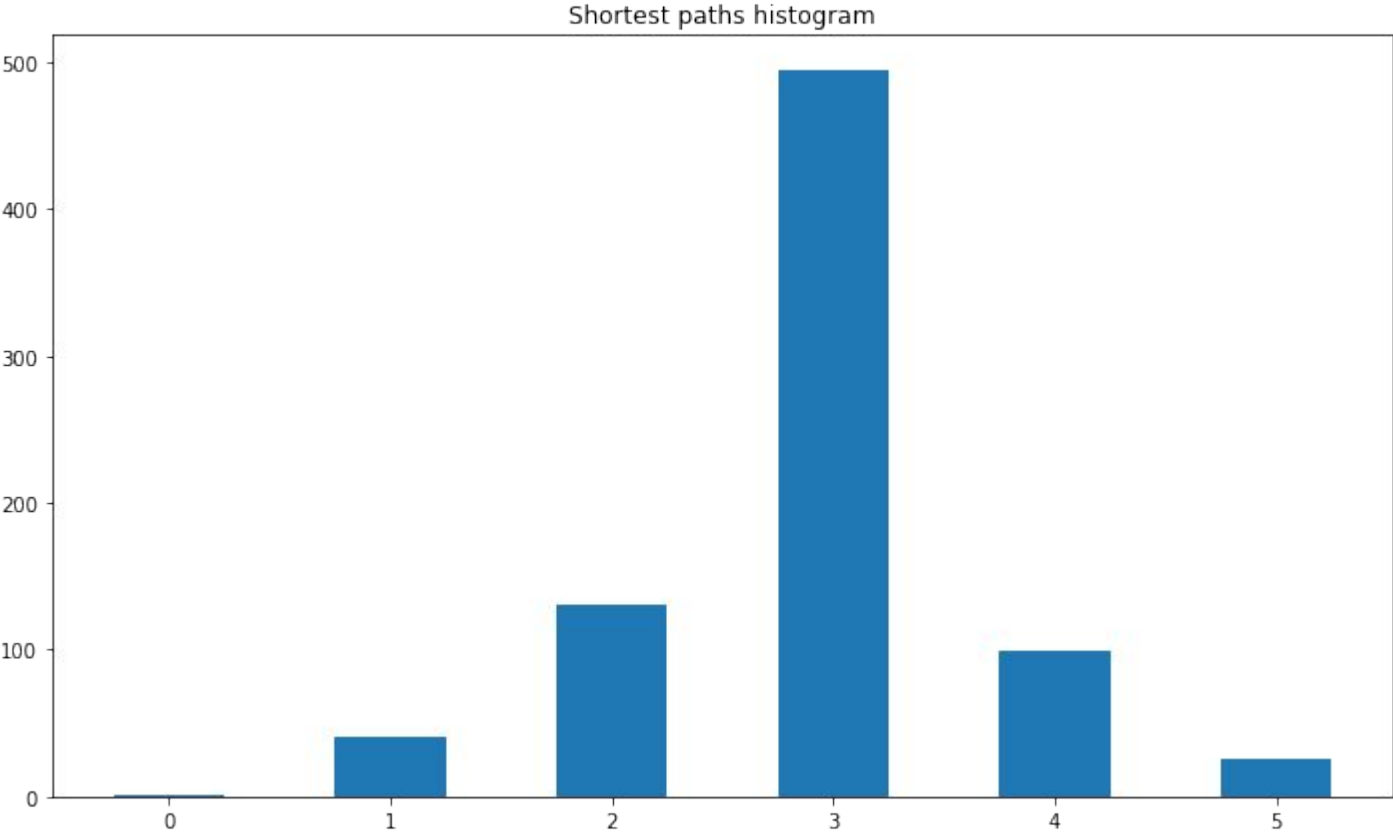
0.431447



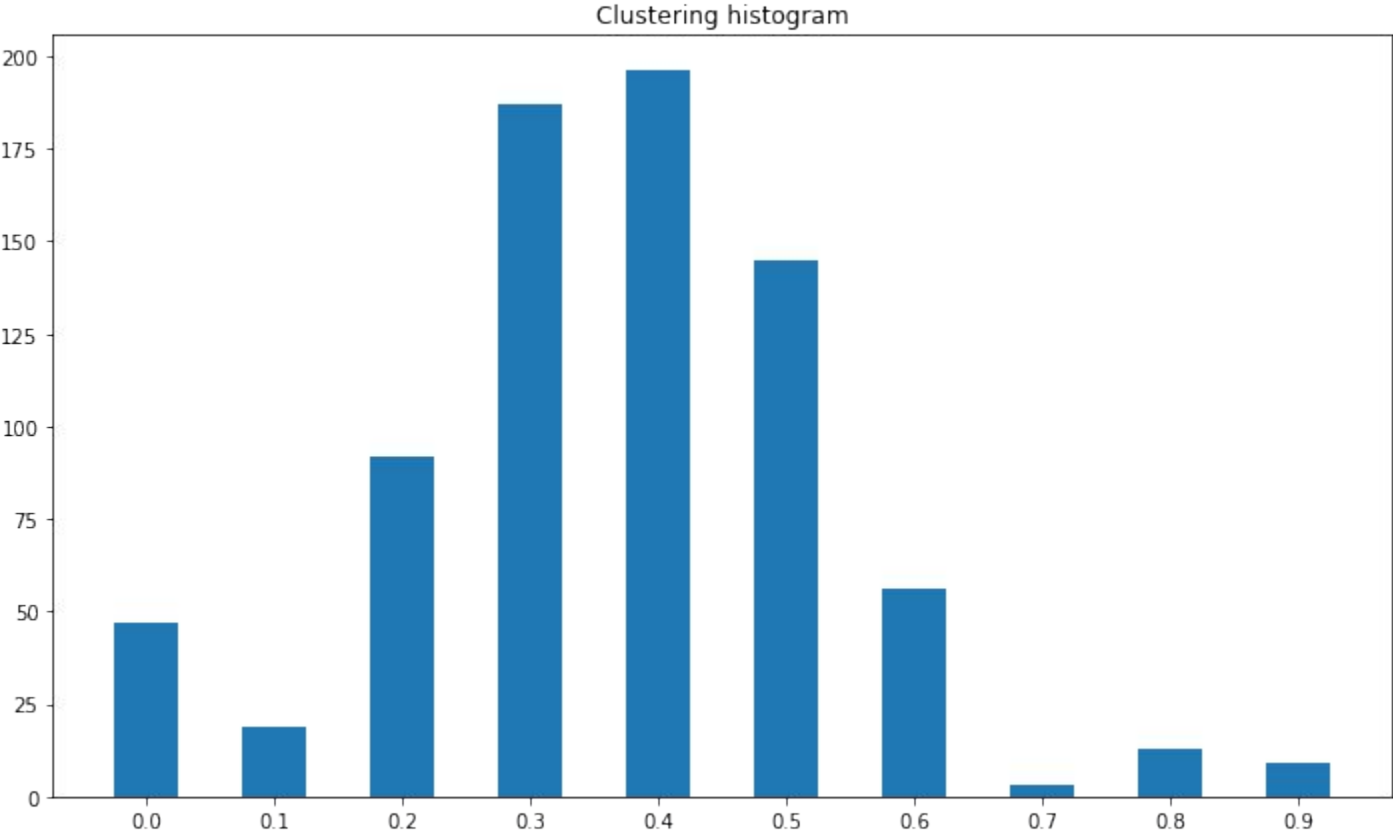
Network summary



Network summary



Network summary



Structural analysis

Similar by average clustering coefficient

Best - Barabasi model

Erdyosh-renyi model: 795, 0.45

0.4497594084351664

Diff: 0.01975881274833946

Barabasi model: 795, 165

0.4311950983488473

Diff: 0.00025

Watts Strogatz model: 795, 144, 0.2

0.42960391795394903

Diff: 0.00184

Structural analysis

Centralities:

betweenness

0	Nosirov Nusrik	0.076974
1	Ivanenko Alexey	0.041796
2	Sharapov Viktor	0.041211
3	Gostkina Alisa	0.036435
4	Goncharova Ann	0.031783
5	Lukoyanov Artyom	0.031312
6	Naumenko Nikolay	0.030848
7	Ragimova Kamila	0.030847
8	Abramov Maxim	0.028895
9	Zueva Nadya	0.026873

Looks fine, since the top people presented are in 2 logical clusters: dubna and phystech/moscow

Structural analysis

Centralities:

degree

0	Polin Oleg	0.363980
1	Grishutin Alexander	0.333753
2	Kalgushkina Veronika	0.306045
3	Parfyonova Yulya	0.294710
4	Erlikh Ivan	0.282116
5	Gazizullin Malik	0.255668
6	Akhmetzhanov Talgat	0.251889
7	Bezlepkin Matvey	0.245592
8	Kuleshov Igor	0.241814
9	Zhukovsky Anatoly	0.240554

closeness

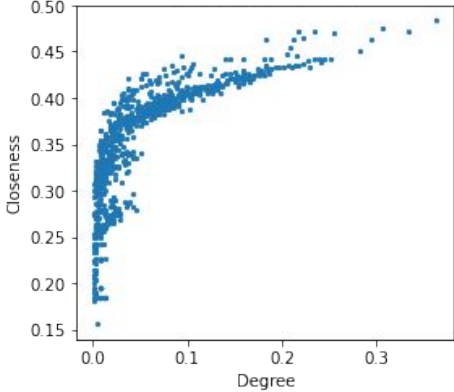
0	Polin Oleg	0.484146
1	Kalgushkina Veronika	0.476019
2	Blagodarny Evgeny	0.472057
3	Abramov Maxim	0.471217
4	Grishutin Alexander	0.471217
5	Gazizullin Malik	0.470658
6	Naumenko Nikolay	0.464056
7	Gridasov Ilya	0.462704
8	Parfyonova Yulya	0.462704
9	Ayvazov Denis	0.462434

Also looks fine, since Oleg and Ivan talk to most students, Yulia and Andrew are from studsoviet, Veronika and others are from my stage

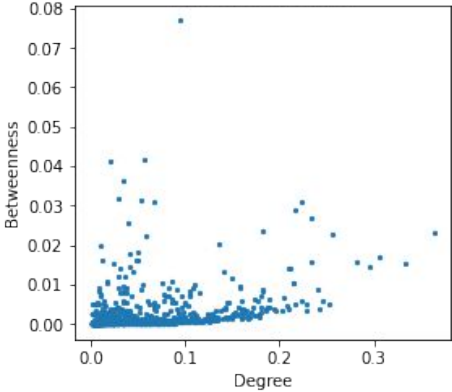
Structural analysis

Correlation:

Correlation: 0.7411

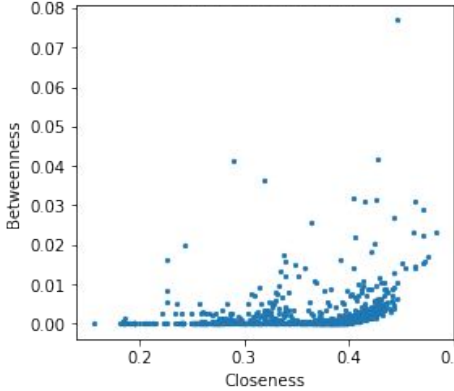


Correlation: 0.3268

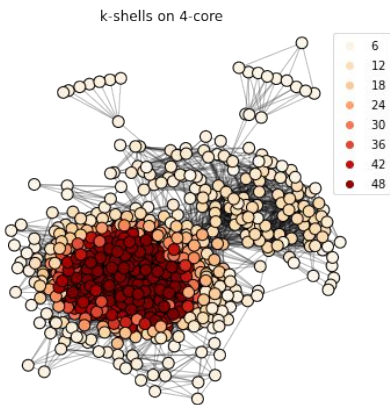
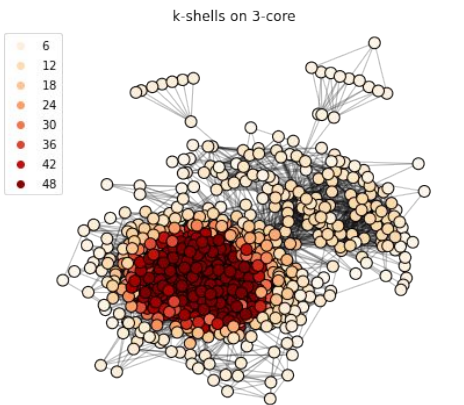
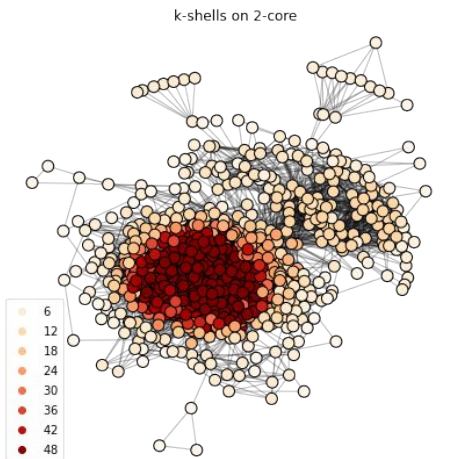
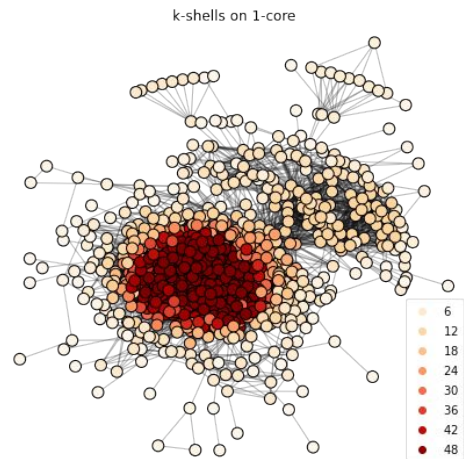


No strong correlation

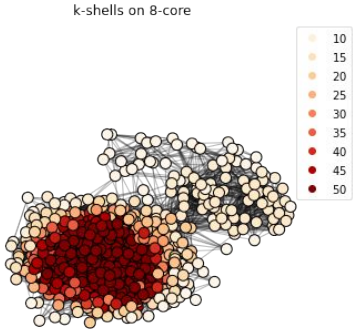
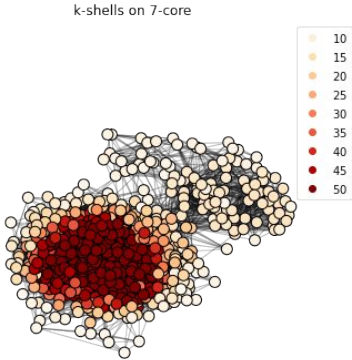
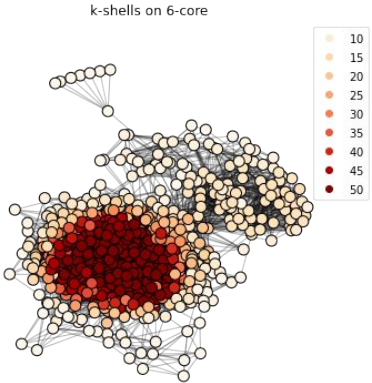
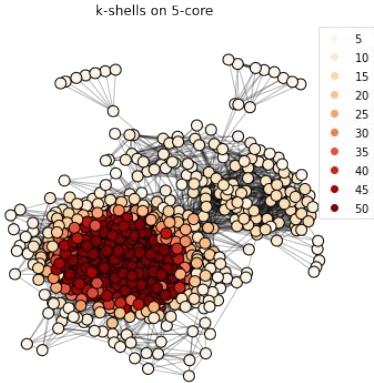
Correlation: 0.2700



Community detection K-shells

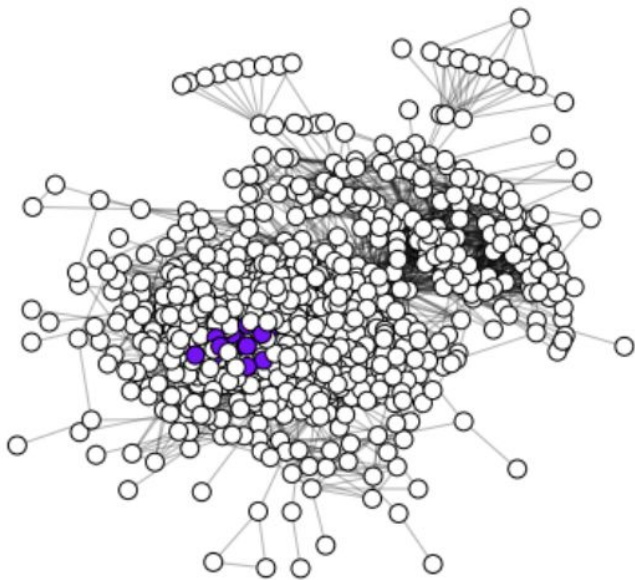


Community detection K-shells

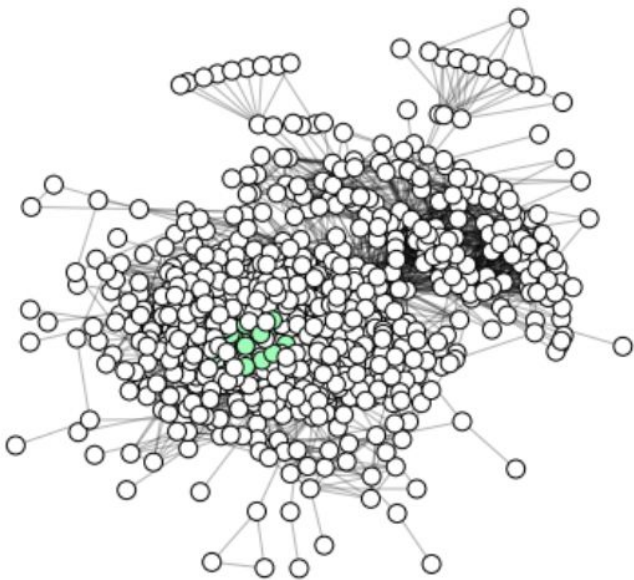


Community detection Cliques

Clique of the size 24



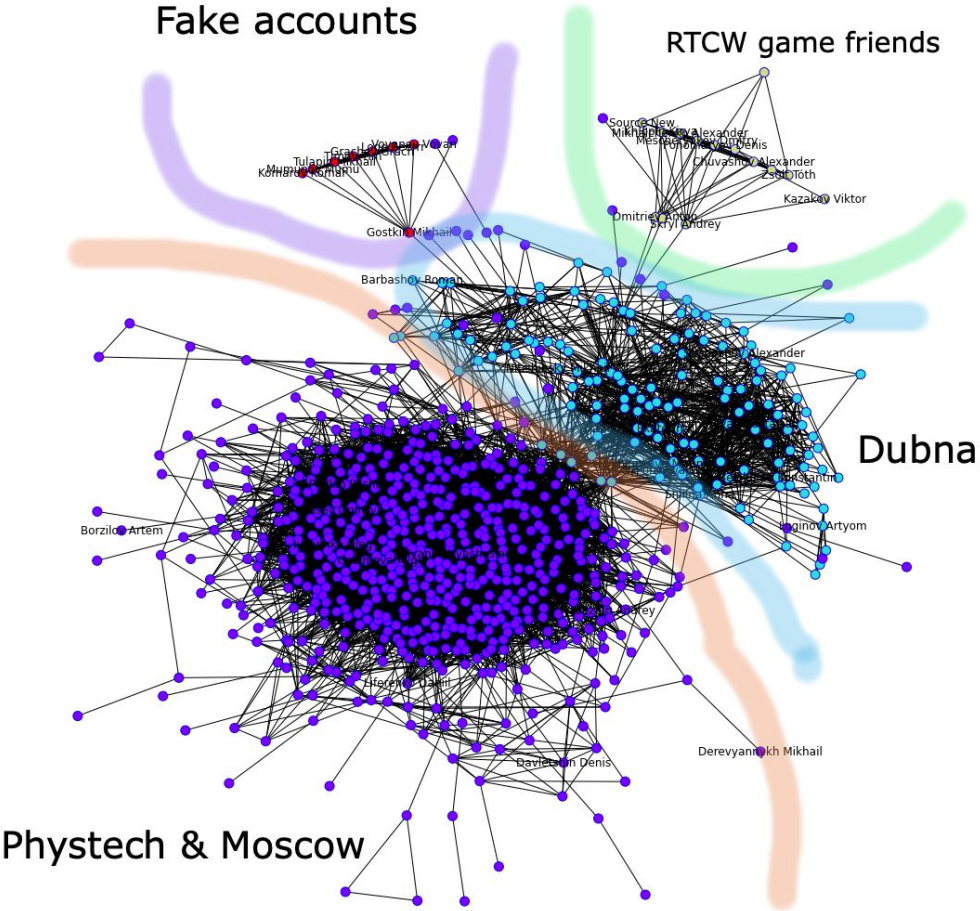
Clique of the size 24



15 cliques of size 24, phystech guys

Community detection Best clustering

Best clustering - spectral, 4 clusters



The end

Thanks for watching!