Network Science Project

Daria Galimzianova

The Graph

1000 random followers of Pavel Durov's VK page.

Nodes: people

Edges: friendship

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Poma Pabota
                                                                    Oleg Zubanov
                                                                                   Nina Guseva
                              Nargiza_Kosmosbenesaladitu Islam
                     Azalia Isaeva
Ayza_KadyrMahintiningdhintiningdhintining
                      Mohamed Chaib Elena Prekrasnayaha Cash
                              Marina Pletneva Veronika Glukhova
                                                                                Irina Wasova
                                                                                        Evgeny Maximov
                                                                                          Alexander Rublyov
                                                                                          Egor Lukin
                                                                                                                Nadeer Alnadeer
                                                                                                              Mihail_Vaskov Lyonya_Byzenbart
                                                                                             Maria Lenorman
                                                                                   Hovzento Blazar Grinchuk
     Tina_Mironova Yashar Khankishiyev
Kamel_Molganie8akharov Arif Lackari Yashar Khankishiyev
Kamel_Molganie8akharov Arif Lackari Yashar Khankishiyev
                                                                     Alexander Filming
                                                                                        Dima Soufi
                              Arzu Witakw Bozhko
      Mukaddas Shukurova
                                                                                                                Vladislav. Glukhov
                                                                                                        Ibragim Murtazaliev
                        Elena_Leontye(izanna_Voskanyariyalenko Dmitry_Shulepov
                                                                                Ksenia Efimova
Alyona Apvpr
                                  Sergey Kuzmin
                                                                                 Nikita Grigoryev
          Artyom Denisov
                                                                                       00_8000
                                                                                                                             Ivan Grislin
Marina Popova
                                                                                                       Sofish Nesquik
                                                                           Marcus Blary
                                                                                                              Fred Fredos
             Karina Landorf
                                         Evgeny Osin
                                                            Alexey Shatrov
                                                                                                    Mark_Timshinanya_Lvova
                                                                         Sasha Bocharov
                     Andrey_Melnikov
                                                                                         Kokonoy Khadjime
                                                        Matvey Romanov
                                  Boris_Vasyukov
Olga_Ryazanova Andrey_Tyagunov
                                                                                                              Maxim_Shalamov Mark_Pelonsky
             Anton Voronovskaya
                                                              Timofey_Agapov
                                                                                     Zhenya_Gherpityak
Roma_Afanasyev
                                                             Evgeny Sytsevich
                    Temur_Rakhmatullin Edvard_Erlik
                                                                                            Karbon Legendary
                             Konstantin Khamitov
                                                                                                       Malina Ayvori-Soushin
                                                        Kirill Gorbachyov Dark Moon
                                                                                            Ivan_Bagin Oleg_Kochubey
                                                                                                                 Grisha_Kazakov
                                                                                  Daniil Ghanchin
                                          Vanya Skabelkin
                                                                                                    Maxim Rychkov
                                                                                                     Albert Funk
                     Sergey Artyom Akhmedshanoshapan_Mettalhandha_Feofilov
                                                                                          Ilya Sytenko
     Anton Shadrin
                                                         Sasha Navolokin
                               Sasha Vasin
                                                                        Roma Familia
                                                                             Nikita_Donskoy
                                            Timofey Solonchuk
                                      Yaroslav Terekhov Terekhov
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Description of the graph

Number of nodes: 166

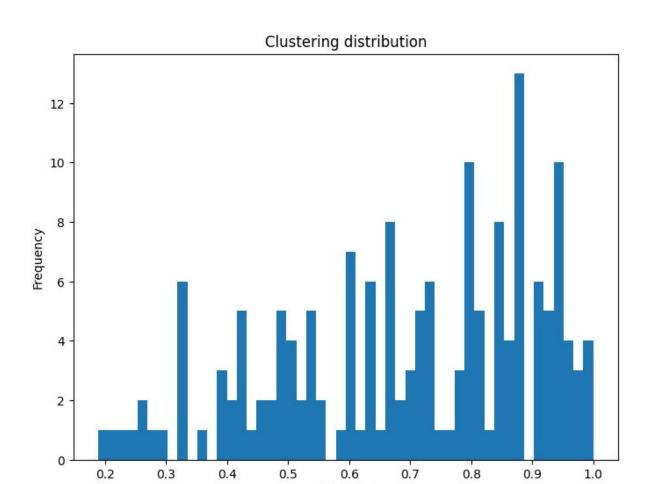
Number of edges: 3541

Radius: 3

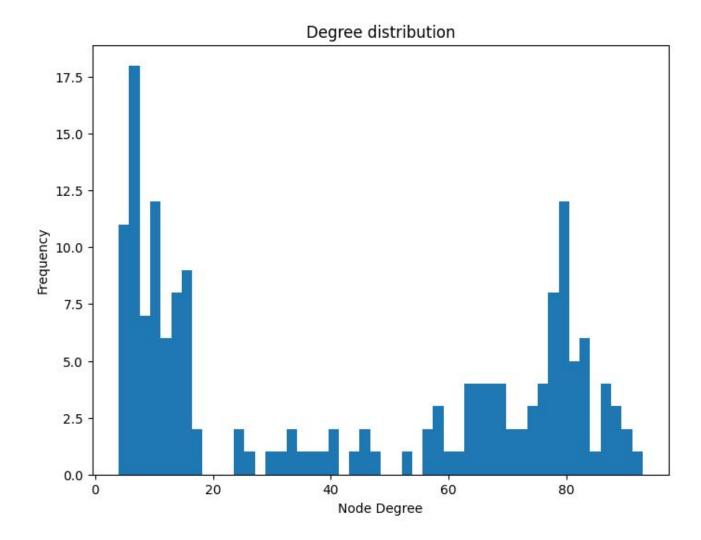
Diameter: 4

Average shortest path length: 2.05

Average clustering coefficient: 0.69



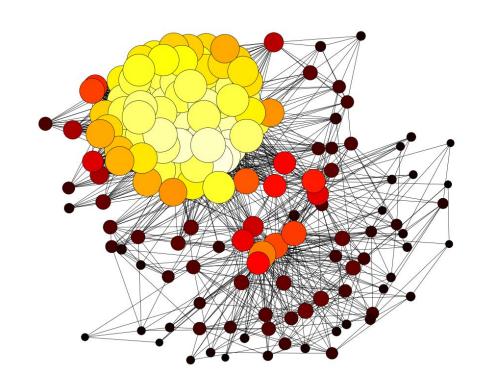
Clustering



Top 10 degree centrality

Degree centrality

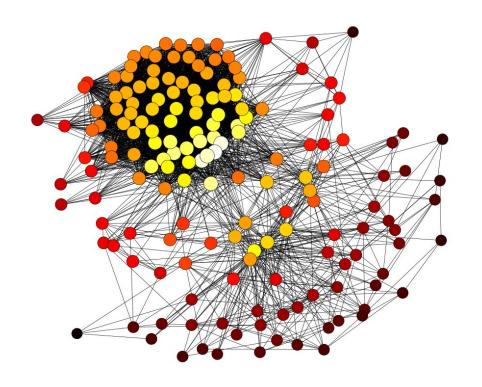
	name	centrality
7	Kirill_Sokolov	0.563636
9	Adam_Kirk	0.551515
44	Vladimir_Erapolov	0.545455
35	Mazen_Mohamed	0.539394
27	Emma_Ragimova	0.533333
81	Ruslan_Semenets	0.533333
1	Grigory_Ruzhinsky	0.527273
94	Julia_Bay	0.527273
61	Yan_Skameykin	0.527273
23	Svetlana_Butyaeva	0.521212



Top 10 closeness centrality

Closeness centrality

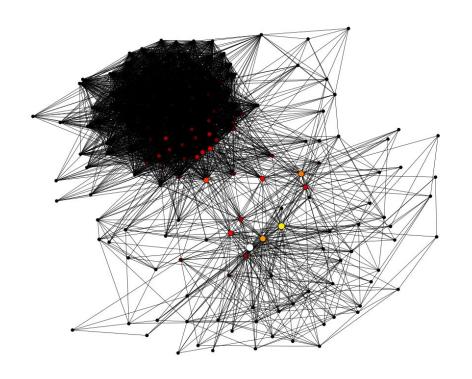
	name	centrality
35	Mazen_Mohamed	0.676230
1	Grigory_Ruzhinsky	0.665323
27	Emma_Ragimova	0.665323
44	Vladimir_Erapolov	0.654762
72	Vitaly_Privalenko	0.639535
40	Ekaterina_Sokolova	0.634615
94	Julia_Bay	0.634615
7	Kirill_Sokolov	0.632184
19	Eleonora_Nosikova	0.629771
81	Ruslan_Semenets	0.622642



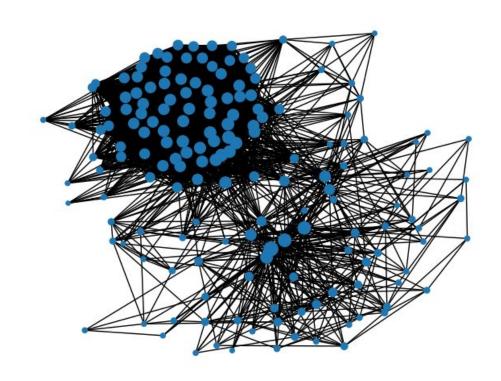
Top 10 betweenness centrality

Betweenness centrality

	name	centrality
108	Timofey_Agapov	0.104207
12	Sasha_Bocharov	0.074875
10	Andrey_Tyagunov	0.060990
15	Ksenia_Efimova	0.056798
72	Vitaly_Privalenko	0.045838
113	Matvey_Romanov	0.037877
6	Dmitry_Shulepov	0.036551
35	Mazen_Mohamed	0.033471
4	Nikita_Grigoryev	0.031901
44	Vladimir_Erapolov	0.030443

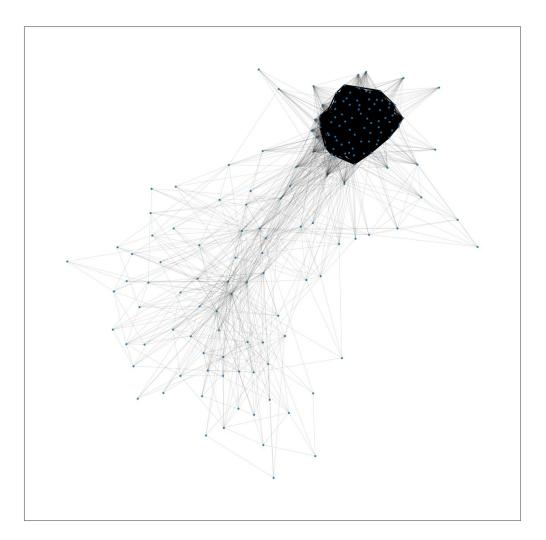


Graph where node size depends on PageRank score

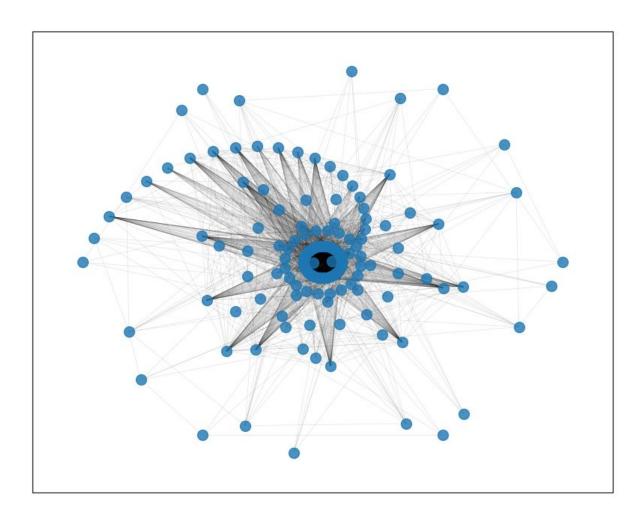


Cliques

42 cliques with length > 50

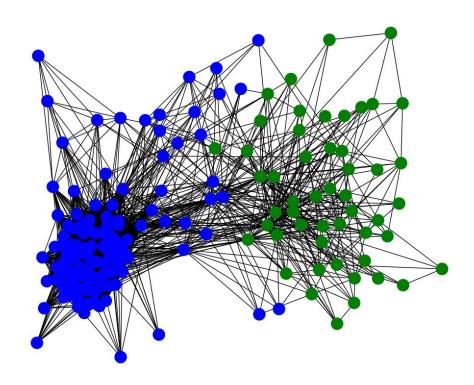


K cores visualization



Girvan Newman community detection algorithm

Modularity score: 0.13



Label Propagation algorithm

Modularity score: 0.15

