




# Facebook's Network Dynamics for Enhanced Engagement

Group 2





How can we **enhance**  
**user engagement** and  
**identify influential**  
**users on facebook?**

## Definition

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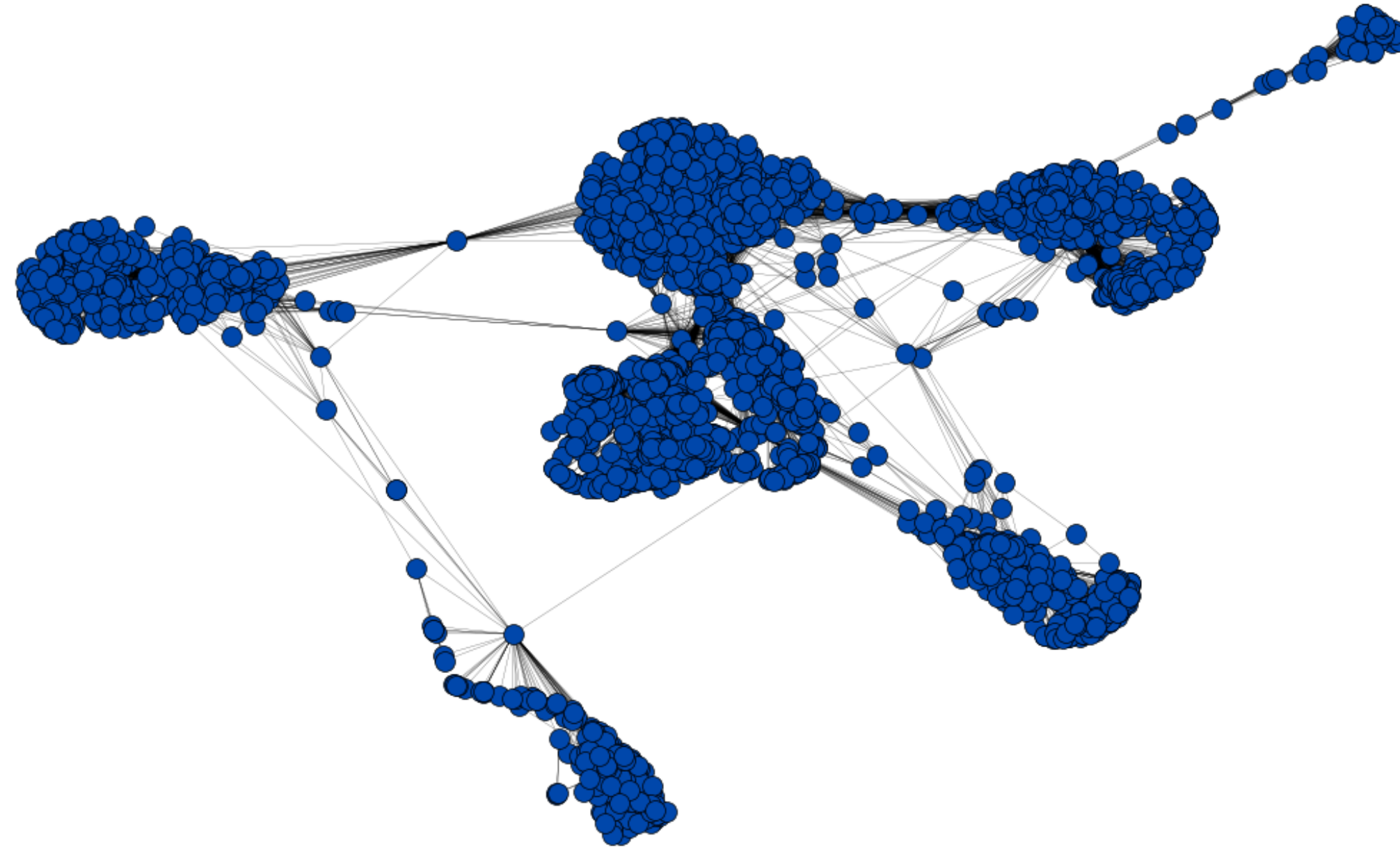
<b>nodeld.edges</b>	Edges in the ego network for nodeld.
<b>nodeld.circles</b>	Set of circles for the ego node. Each line contains one circle, starting with the circle's name.
<b>nodeld.feats</b>	Features for nodes.
<b>nodeld.egofeat</b>	Features for the ego user.
<b>nodeld.featsnames</b>	Names of each feature dimension.

## Dataset Statistic

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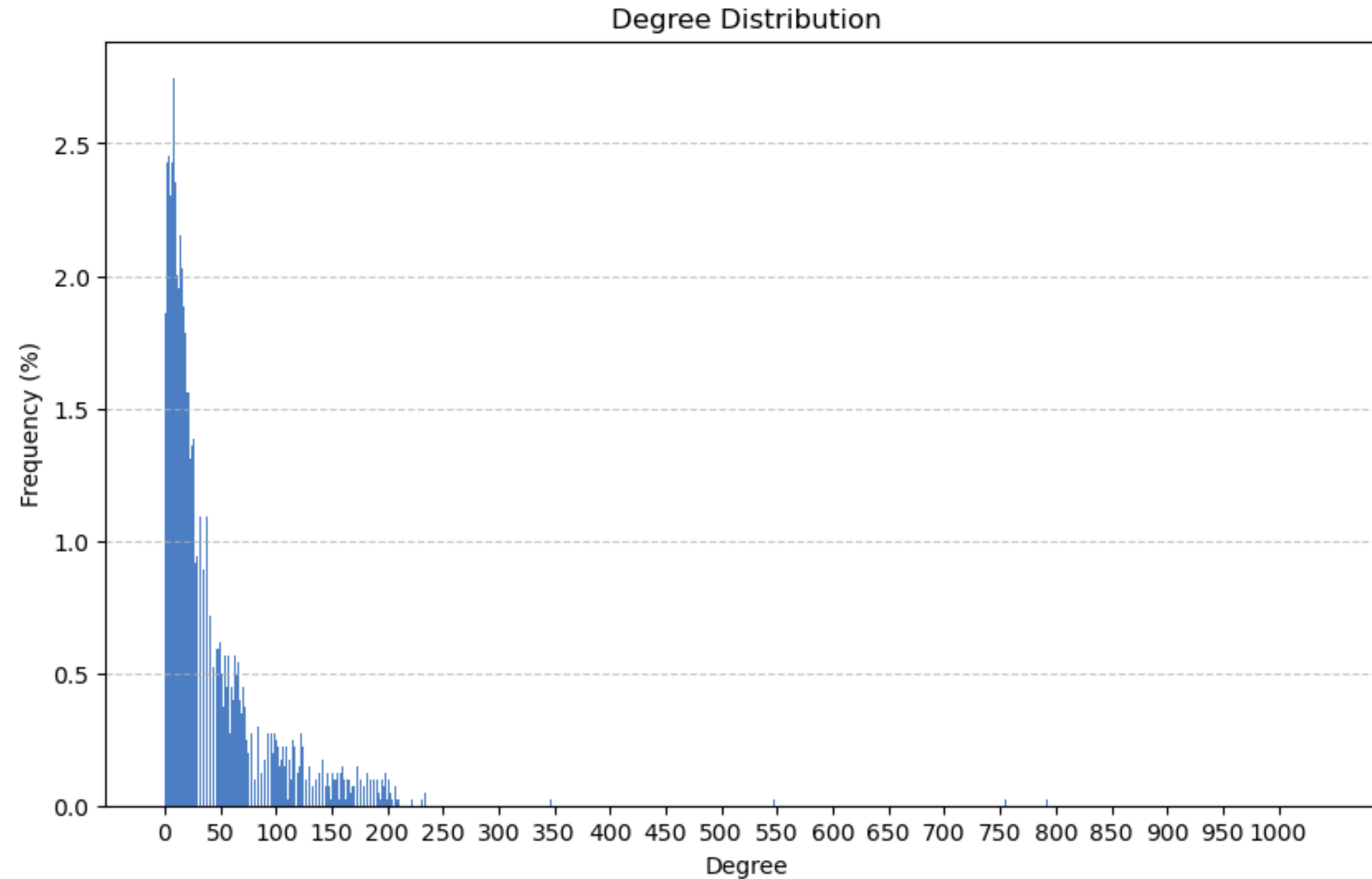
<b>NODES</b>	4039
<b>EDGES</b>	88234





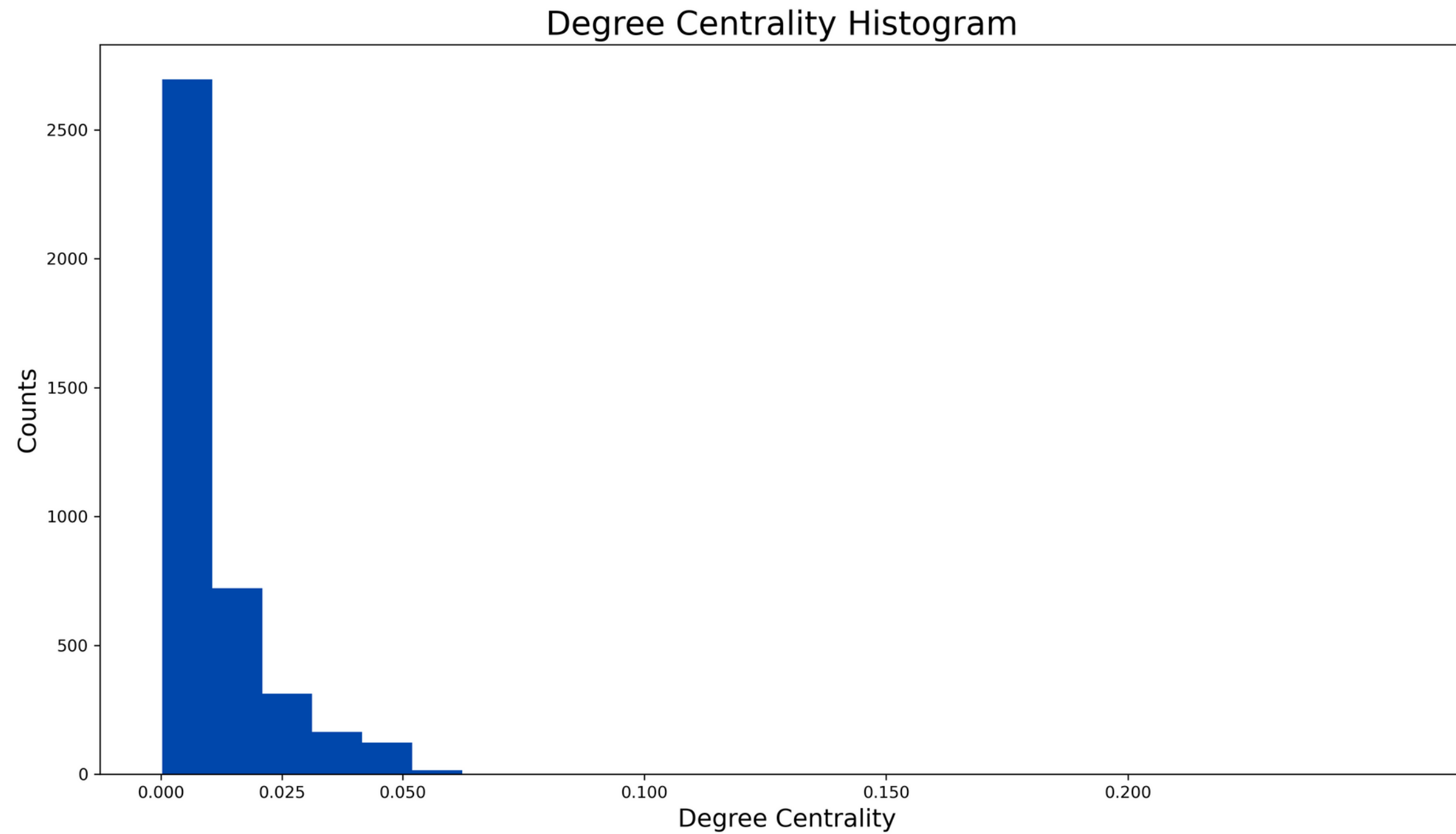
Graph of G using Fruchterman Reingold layout.

# f ● Network Degree Distribution



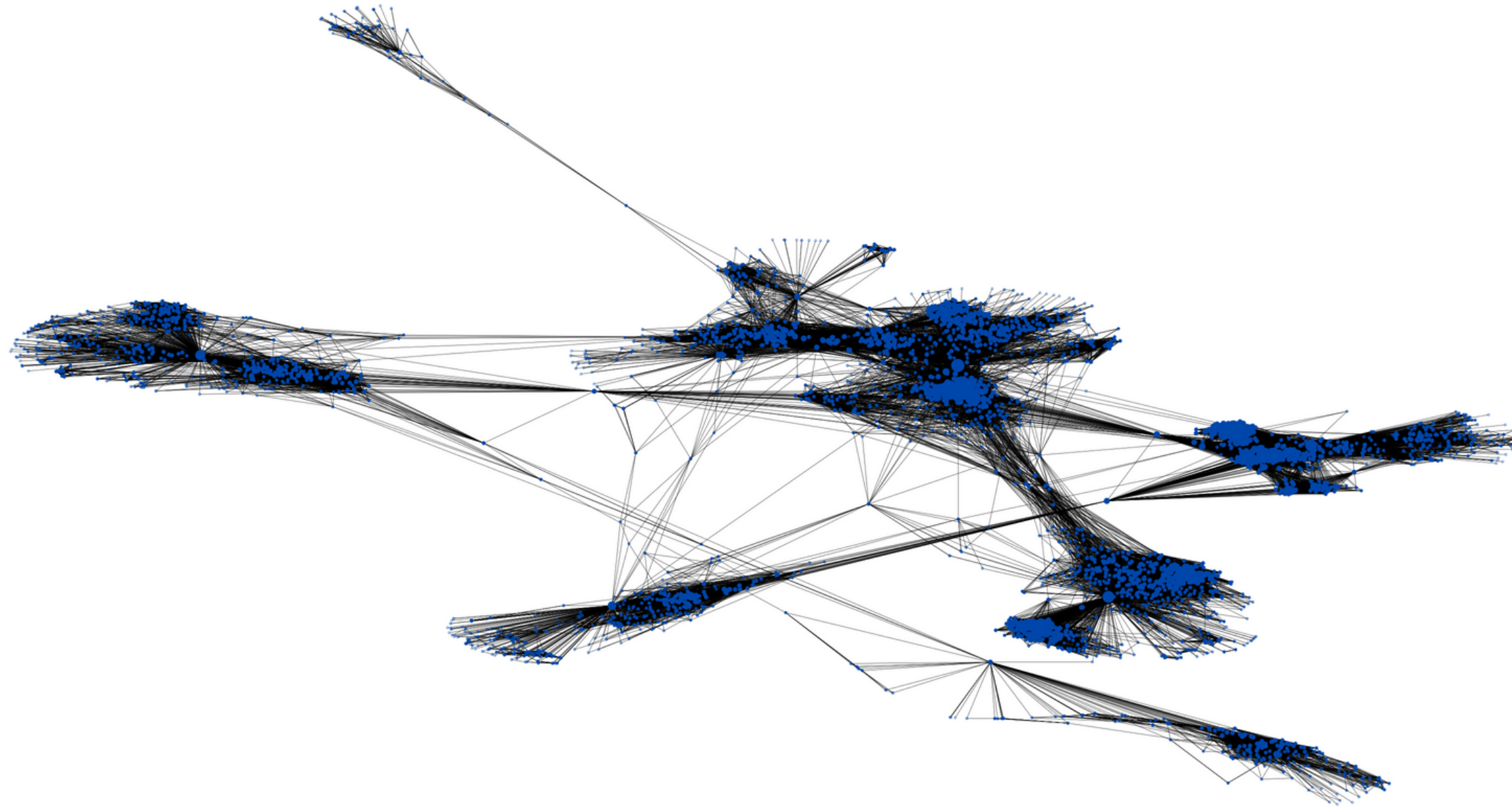
Distribution of node degrees and that the most nodes have a low degree.

# Histogram of Degree Centrality



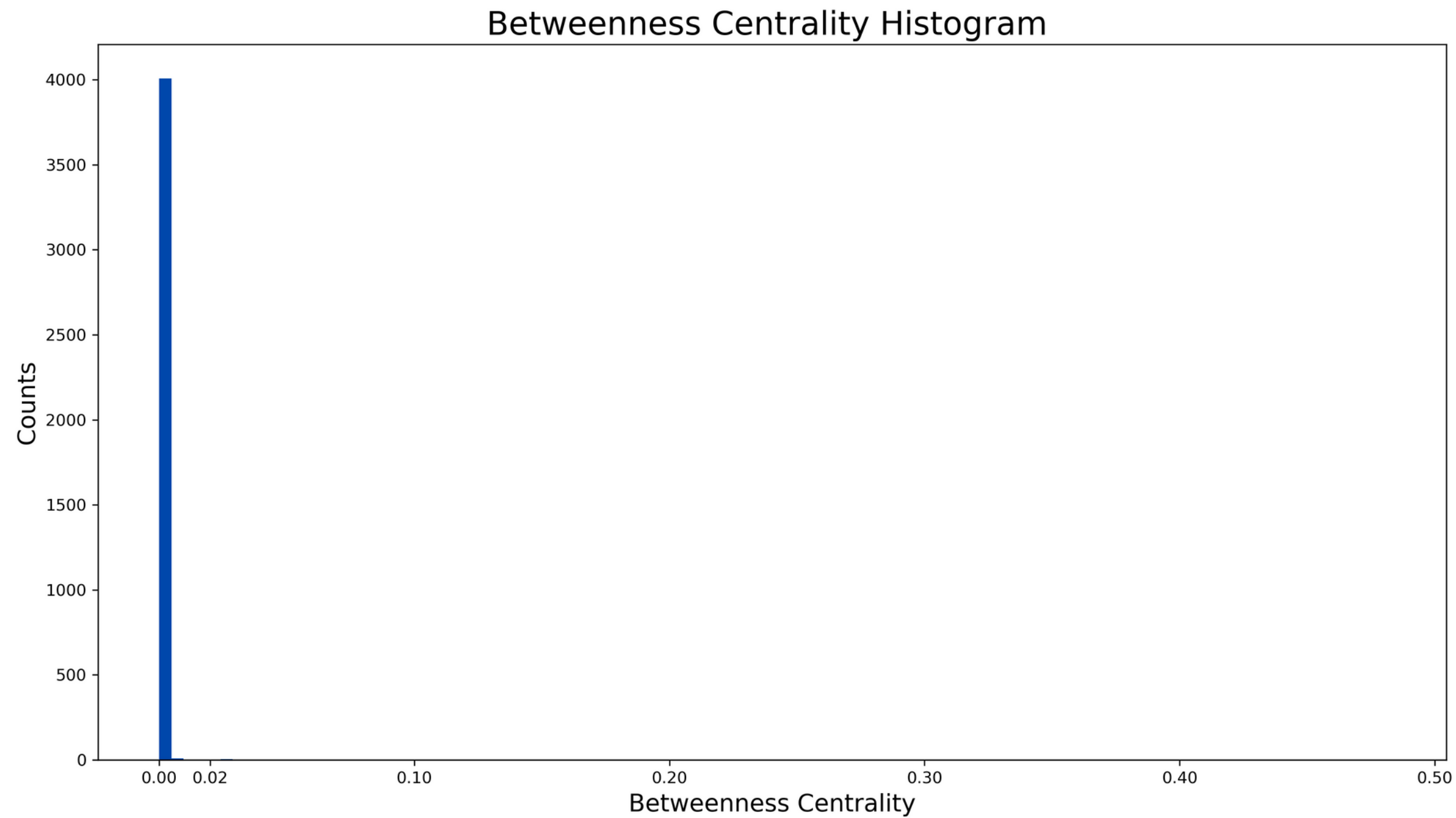
Degree centrality values of nodes in the graph G.

# Network Graph of Degree Centrality



Degree centrality values of nodes in the graph  $G$ .

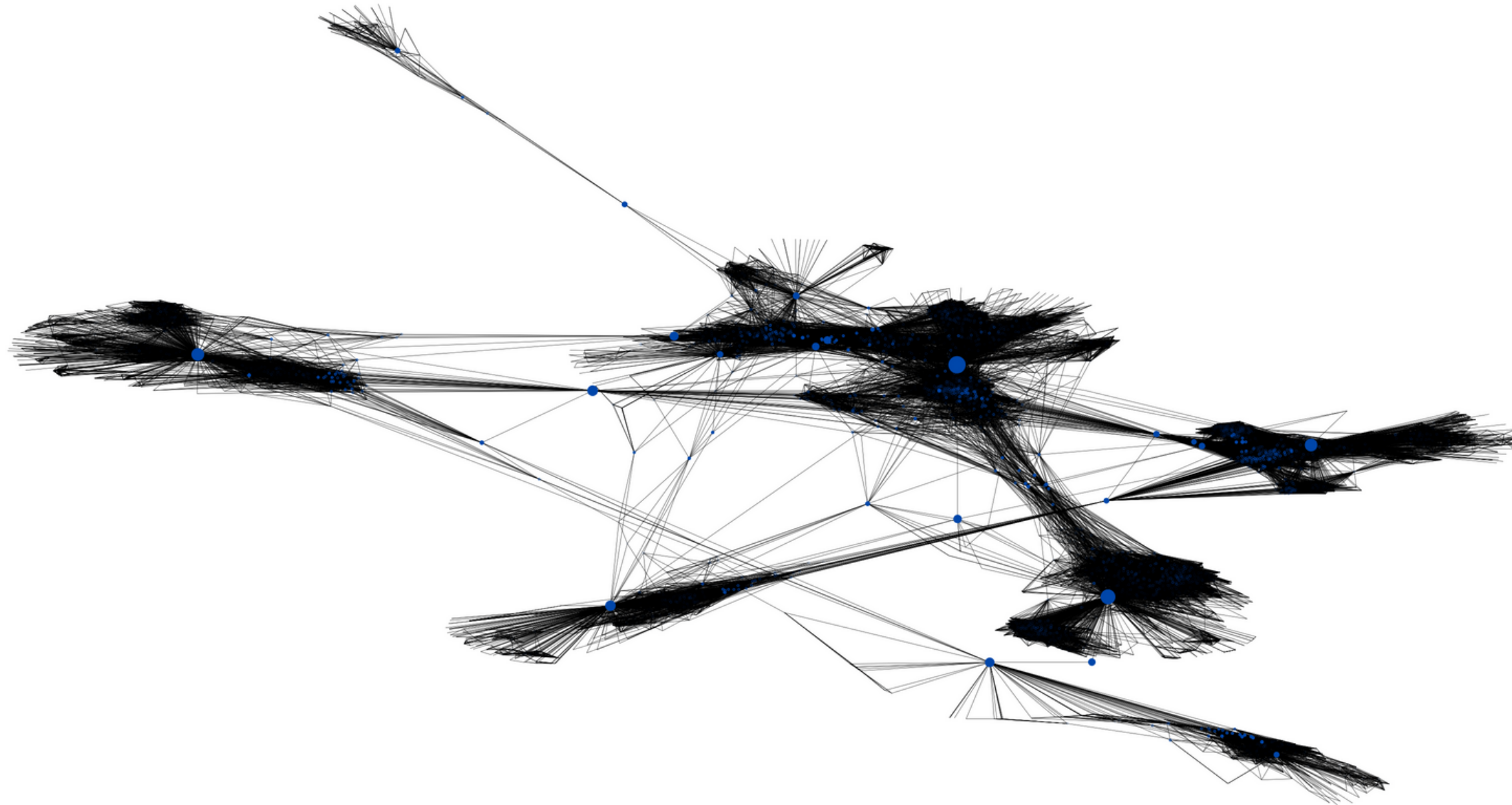
# Histogram of Betweenness Centrality



The betweenness centrality values of nodes in the graph G.

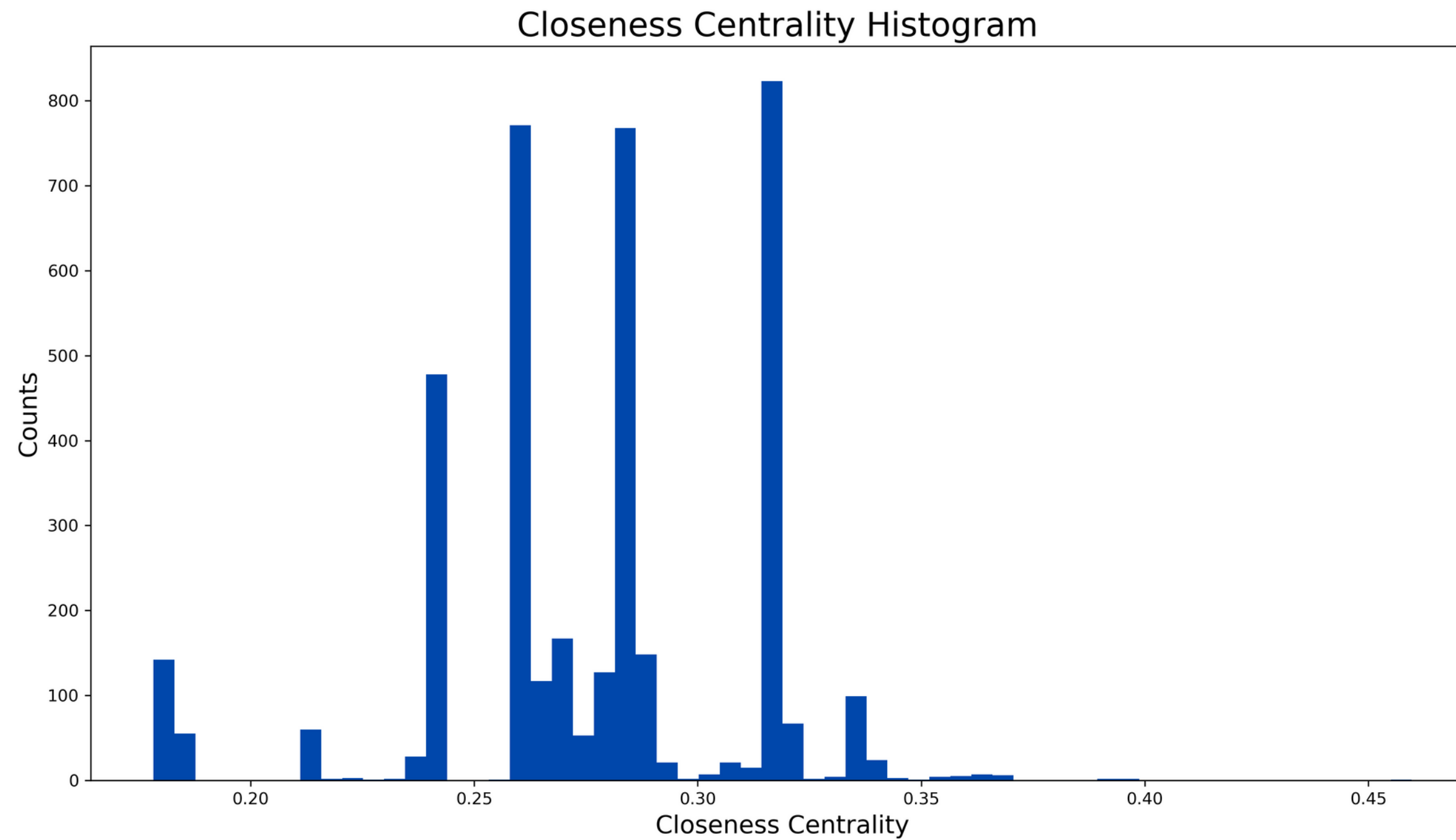


## Network Graph of Betweenness Centrality



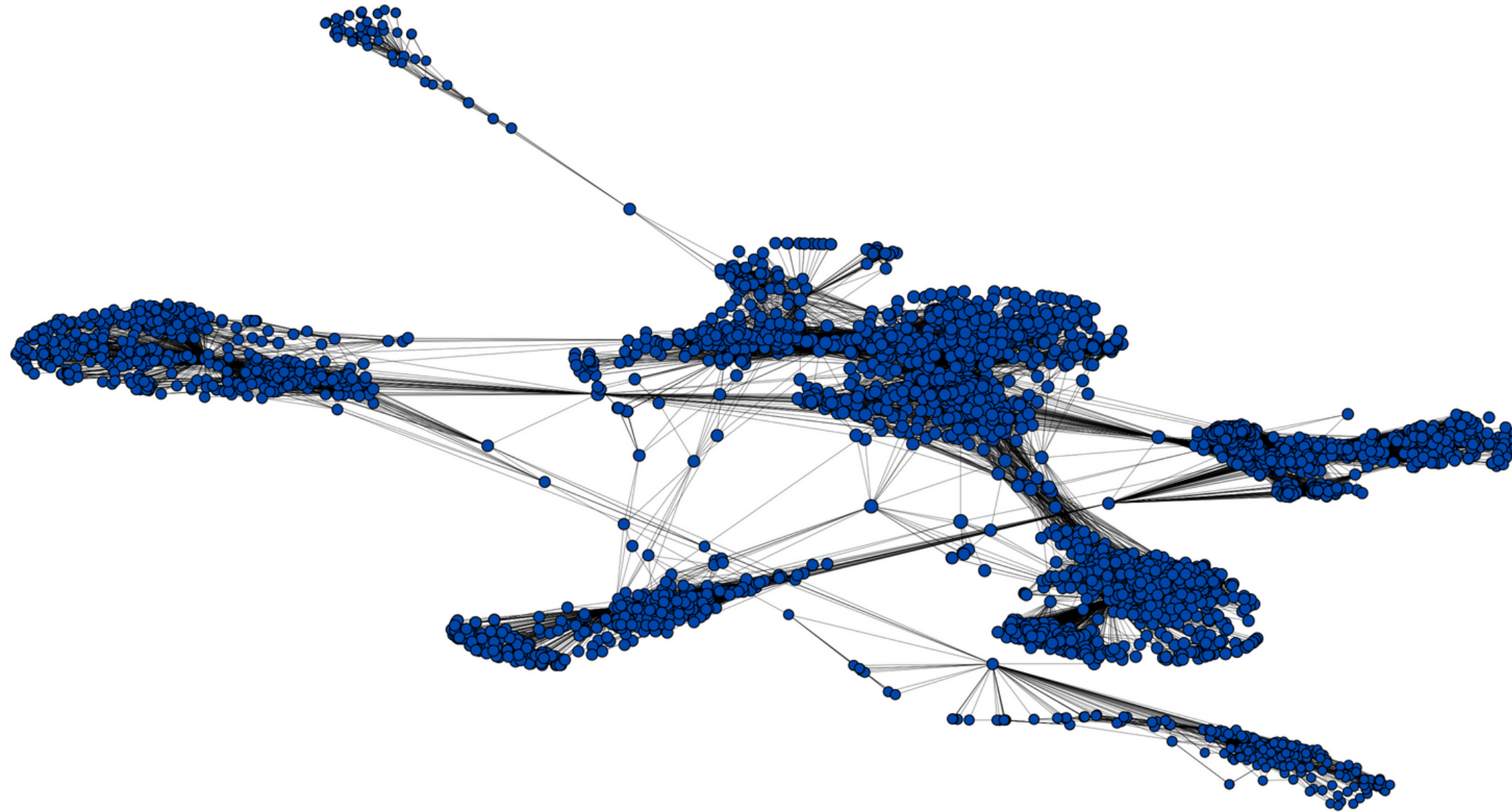
The betweenness centrality values of nodes in the graph  $G$ .

# Histogram of Closeness Centrality



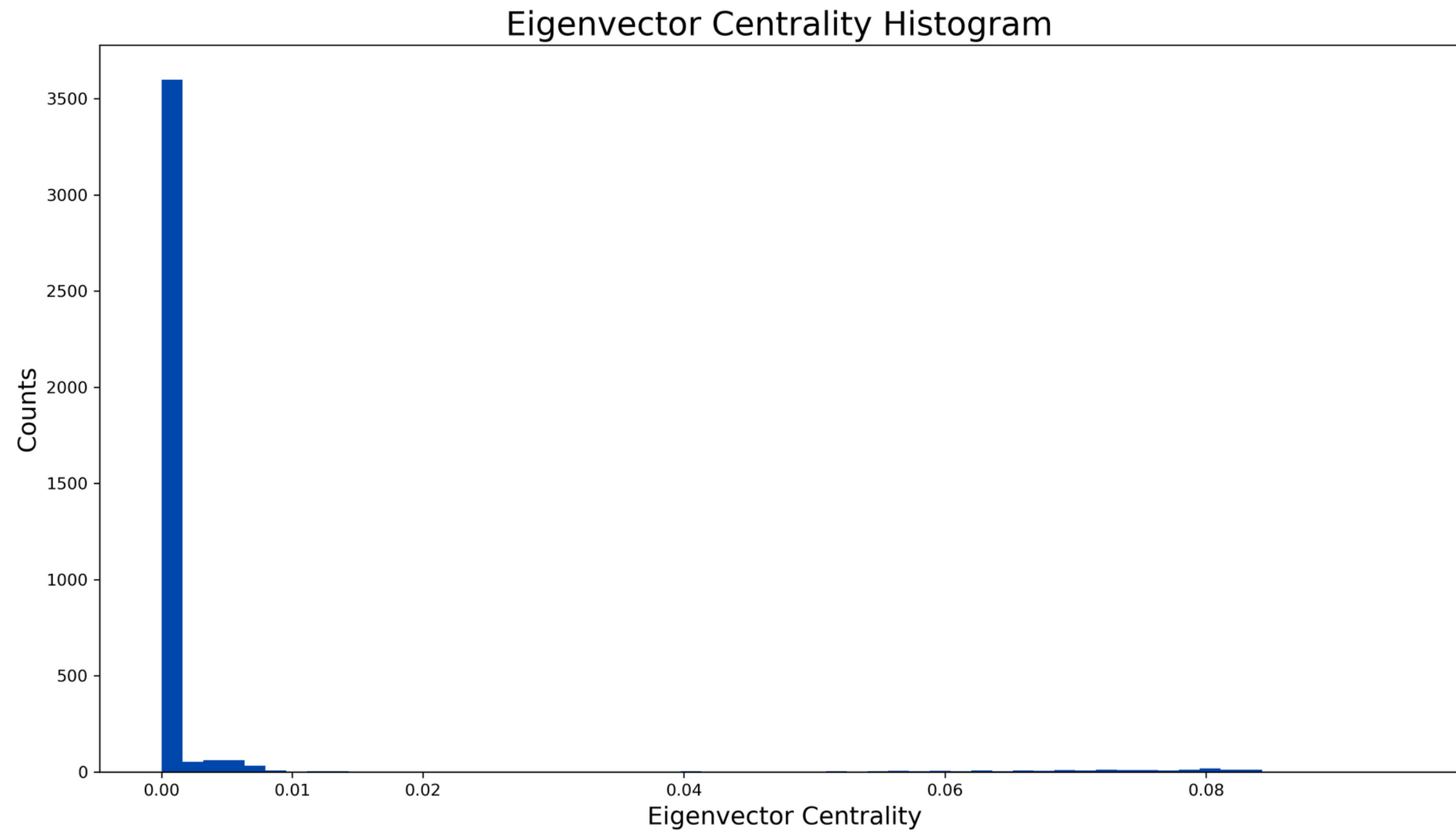
The closeness centrality values of nodes in the graph G.

## Network Graph of Closeness Centrality



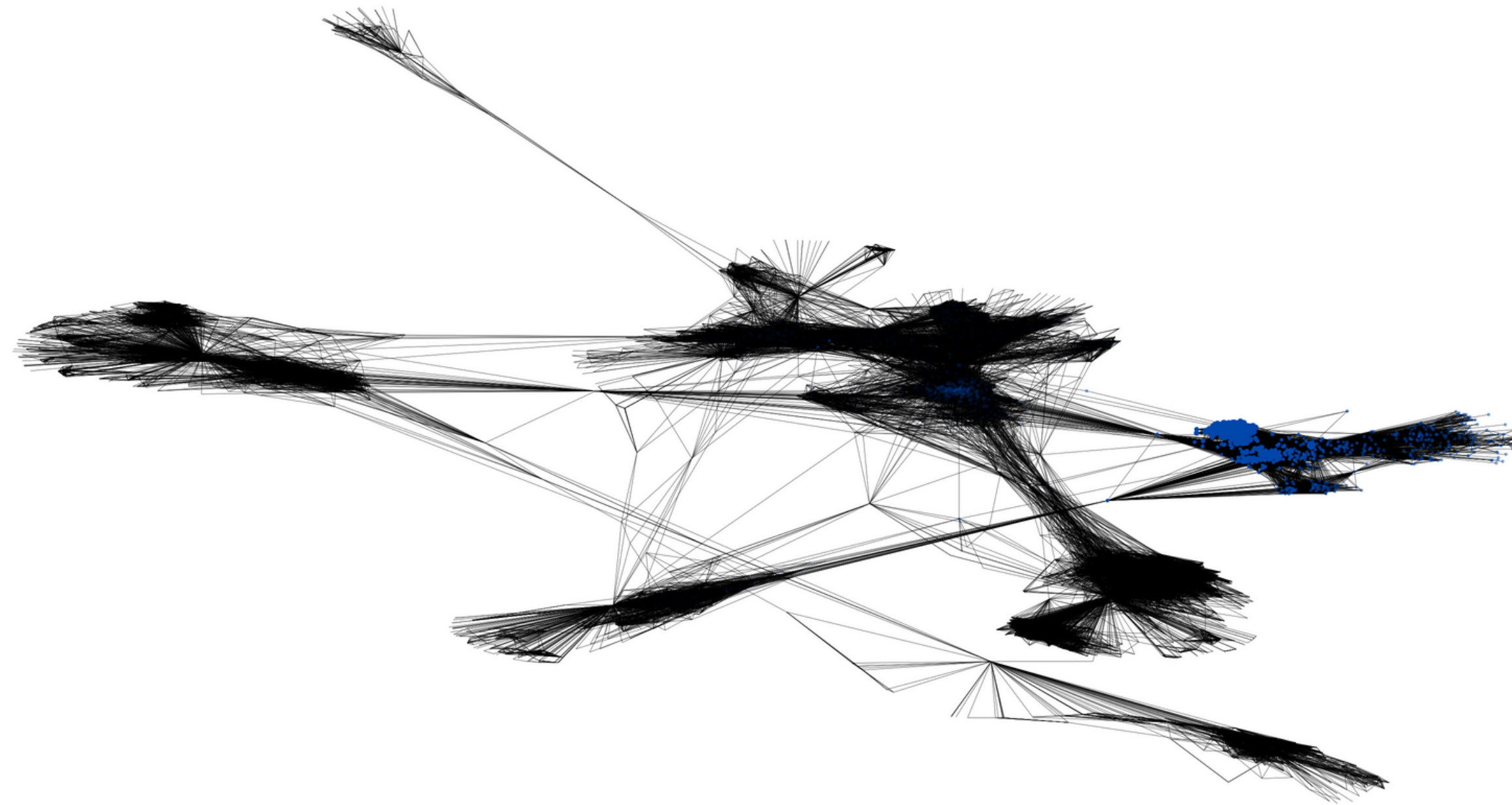
The closeness centrality values of nodes in the graph  $G$ .

# f Histogram of Eigenvector Centrality



The eigenvector centrality values of nodes in the graph G.

## Network Graph of Eigenvector Centrality



The eigenvector centrality values of nodes in the graph  $G$ .



# Conclusion



The network exhibits **high connectivity and clustering**, typical of a social network. Moreover, it was identified that the majority of users have **relatively low degree centralities**, suggesting a hierarchical structure dominated by a few highly connected nodes. Metrics like betweenness, closeness, and eigenvector centralities provided further understanding of the network's dynamics, with **most nodes having modest influence**.



Group 2 | Carreon | Lucas | Peralta | Quipit

**THANK  
YOU!**