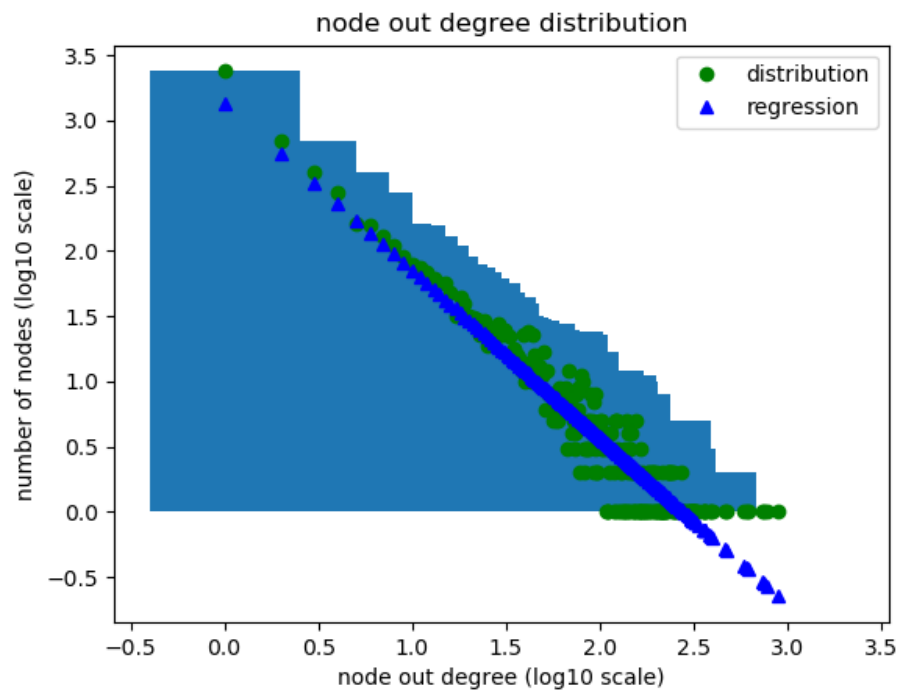


Question 1, Homework 0, CS224W

1. The number of nodes in the network is 7115.
2. The number of nodes with a self-edge is 0.
3. The number of directed edges in the network is 103689.
4. The number of undirected edges in the network is 100762.
5. The number of reciprocated edges in the network is 2927.
6. The number of nodes of zero out-degree is 1005.
7. The number of nodes of zero in-degree is 4734.
8. The number of nodes with more than 10 outgoing edges is 1612.
9. The number of nodes with fewer than 10 incoming edges is 5165.

Question 2, Homework 0, CS224W



The distribution and regression plot are shown as the picture indicates. The coefficient for a and b are $[-1.28106471, 3.1324547]$.

Question 3, Homework 0, CS224W

1. The number of weakly connected components in the network is 10143.
2. The number of edges and the number of nodes in the largest weakly connected component are 131188 and 322486.
3. IDs of the top 3 most central nodes in the network by PageRank scores are [992484, 135152, 22656].
4. IDs of the top 3 hubs and top 3 authorities in the network by HITS scores are [892029, 1194415, 359862], [22656, 157882, 571407] respectively.

Information sheet

CS224W: Machine Learning with Graphs

Assignment Submission Fill in and include this information sheet with each of your assignments. This page should be the last page of your submission. Assignments are due at 11:59pm and are always due on a Thursday. All students (SCPD and non-SCPD) must submit their homework via GradeScope (<http://www.gradescope.com>). Students can typeset or scan their homework. Make sure that you answer each (sub-)question on a separate page. That is, one answer per page regardless of the answer length. Students also need to upload their code on Gradescope. Put all the code for a single question into a single file and upload it.

Late Homework Policy Each student will have a total of *two* late periods. *Homework are due on Thursdays at 11:59pm PT and one late period expires on the following Monday at 11:59pm PT.* Only one late period may be used for an assignment. Any homework received after 11:59pm PT on the Monday following the homework due date will receive no credit. Once these late periods are exhausted, any assignments turned in late will receive no credit.

Honor Code We strongly encourage students to form study groups. Students may discuss and work on homework problems in groups. However, each student must write down their solutions independently, i.e., each student must understand the solution well enough in order to reconstruct it by him/herself. Students should clearly mention the names of all the other students who were part of their discussion group. Using code or solutions obtained from the web (GitHub/Google/previous year's solutions etc.) is considered an honor code violation. We check all the submissions for plagiarism. We take the honor code very seriously and expect students to do the same.

Your name: _____

Email: _____ **SUID:** _____

Discussion Group: _____

I acknowledge and accept the Honor Code.

(Signed) _____