

cmpe556 Midterm Spring 2021 (covid-19)

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1 Question

Let \mathbf{A} be the adjacency matrix of an undirected network and $\mathbf{1}$ be the column vector whose elements are all 1. In terms of these quantities write expressions for:

- the vector \mathbf{k} whose elements are the degrees k_i of the vertices;
- the number m of edges in the network;
- the matrix \mathbf{N} whose element N_{ij} is equal to the number of common neighbors of vertices i and j ;
- the total number of triangles in the network, where a triangle means three vertices, each connected by edges to both of the others.

1.1 Solution

Aaa.

A Read me

Use the given L^AT_EX template for homework.

Please read rules and naming conventions at [LaTeX-Templates](#).