

Major Role on Complete Bipartite Coloring Graph in Anti Spread Corona Virus

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Received 2022 April 02; Revised 2022 May 20; Accepted 2022 June 18.

Abstract: The author introduced new concept of this paper, how to protect from the Corona virus. Here fuzzy related concept act a main role in complete bipartite coloring fuzzy graph networking. Because the minute type of Germs also find out and express. Many of the Mall, Cinema Theater, School, College area having a some of the Corona patient. From this kind of patient, easily spread with others. In this situation the author draw a complete bipartite coloring fuzzy graph to solve this problem. If the graph is complete all the vertices are adjacent. So each vertices have $n-1$ edges. Now the author convert all the Edges are frequency lines and Vertices are convert into some different like scanner, thermometer, sanitizer. This is one of the good idea to protect from corona virus to spread others. And also give an brief explanation of this paper.

AMS MATHEMATICS CLASSIFICATION: 05C₂, 05C₆, 05C₇

Keywords: Complete Bipartite Fuzzy Coloring Graph, Corona Virus, Scanner, Thermometer, Frequency Line, Fuzzy Numbers, Alarm Scanner.

1. INTRODUCTION:

A fuzzy graph theory serves as a mathematical model to represented any systems having a binary value of (0,1). In this binary relation known as in the fuzzy number. The fuzzy number have to use anywhere in graph that the graph is called fuzzy graph. Its works various field of science and mathematical, engineering. For example, Networking, satellite, building construction etc. A Fuzzy Graph with η points and $\eta - 1$ lines are called complete fuzzy graph[1]. The author takes to this complete fuzzy graph to solve his problems. Because each points have same degree and also each and all vertices are adjacent. It's also called full fuzzy Graph or complete graph. If we use fuzzy numbers in each and every vertex of this graph is called complete fuzzy graph. The complete fuzzy graph having lot of interesting application in Networking, System Analysis and complete circuit process. Sometimes fuzzy graph helps to solve some critical situation in human life. Suppose we want to reach our destination, that time we have small count of money so long travel may be risk in this situation the traveler can select which way is best to reach our destination with enough money. This problem is solved in shortest path with fuzzy number[2]. Without fuzzy logic we can't do some difficult work especially networking. The concept of fuzzy relation introduced by Zadeh in 1965. And the fuzzy theoretic concept was developed by Rosenfield in 1975[3]. In 1973 kaufmann defined fuzzy graph for first time. Eslahchi et al introduced fuzzy coloring of a fuzzy graph. And arindamdey et.al introduced an algorithm with an illustration to color the complement of the fuzzy graph.

The complete bipartite coloring fuzzy graph is used to finding corona virus in particular area. The fuzzy numbers are given are each vertex and edges[4]. The complete bipartite fuzzy coloring graph are useful because our aim to protect

themselves from germs[5].. Some of the crowd place peoples have difficult situation to get safe zone. If all Mall, Theater, school college use this technique the problem will solved at quick time[6].

This paper contains some basic concepts and definition[7]., which helps to give a proper detail to understand the graph theory[8]. After the main application of the graph is networking. This graph act different role in networking. How to identify the Germs and how to work in human real life will explained briefly.

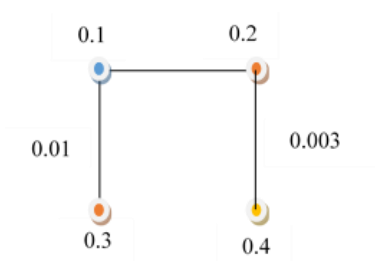
Corona virus disease is an infectious disease caused by the SARS-coV-2 virus. Many of the people infected with the virus will experience mild to moderate respiratory illness and recover without requiring special treatment. However, some will become seriously ill and require medical attention. Anyone can get sick with covid19 and become seriously ill or die at any age. The virus spread from an infected person's mouth or nose in small liquid particles when they cough sneeze speak sing or breath. These particles range from larger respiratory droplets to smaller aerosols. It is important to practice respiratory etiquette, for example by coughing into a fixed elbow and stay home and self isolate until you recover if u feel unwell.

The author Aim of this paper to reduce or stop corona virus spread to others. Now the complete bipartite fuzzy coloring graph act as a major role in anti spread corona virus. Here the author explains how to protect themselves from others and how will find corona affected person and also explain if covid patient enter the place how it will intimate with bell. And finally, he gives a complete proof of control the covid patient.

2. PRELIMINARY

DEFINITION 2.1:

A Fuzzy Coloring Graph (FCG) is a pair $FCG:(\alpha, \beta)$ where α is a subset of a Fuzzy Set α and β is a Fuzzy relation on α

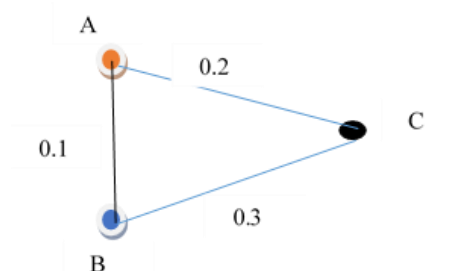


DEFINITION 2.2:

A complete bipartite fuzzy graph CBFG is complete if $CFG:(V, E)$ is complete it can be partitioned into two subsets V_1, V_2 such that no edge has both end point in the same subset.

DEFINITION 2.3:

A fuzzy Graph which relation between all connected vertices is called network. If starting point and end point those are connected



DEFINITION 2.4:

A Fuzzy Graph FG is connected. If $\gamma^\infty(\alpha, \beta) > 0$ for all $\alpha, \beta \in A^*$ then the line α, β is said to be connected if $\gamma(\alpha, \beta) \geq \gamma^\infty(\alpha, \beta)$ then the point α is said to be isolated point if $\gamma(\alpha, \beta) = 0$ for all $X=Y$ and $Y=X$

LEMMA 2.5:

If FG is a Complete Fuzzy Graph then $\text{CONN FG}(\alpha, \beta) = \gamma(\alpha, \beta)$ α is vertices and β is path or line.

THEOREM:2.1

The given statement are equivalent then (α, β) is a Fuzzy Graph then $\text{FG}(C)$

If the Graph is Complete then (α, β) is Fuzzy connectivity point and also it have strongly connected point and connected line. It is not a weakest arc in FG.

THEOREM:2.2

If a complete Fuzzy Graph Complete Bipartite Fuzzy coloring Graph G is called strong cycle. If all the path(lines) are adjacent. Its also A full Graph. Because each and every vertices adjacent. It is called strong cycle of complete Fuzzy Graph.

THEOREM:2.3

If a Bipartite Fuzzy Coloring Graph BFCG is not connected, then BFCG^c is connected.

Proof: Let 0.0001 and 0.0002 be any two vertices of BFCG^c (and therefore of G). if 0.0001 and 0.0002 belong to different components of BFCG, then obviously 0.0001 and 0.0002 are nonadjacent in BFCG and so they are adjacent in BFCG^c . Thus 0.0001 and 0.0002 are connected in BFCG^c . In case 0.0001 and 0.0002 belong to the same component of BFCG, take a vertex 0.0003 of BFCG not belonging to this component of BFCG. Then 0.0001, 0.0003 and 0.0002, 0.0003 are not edges of BFCG and hence they are edges of BFCG^c . Then 0.0001 0.0002 0.0003 is a u-v path in BFCG^c . Thus BCFG^c is connected.

NOTE: BFCG Bipartite Coloring Fuzzy Graph.

NOTE

From the above theorem FG is Complete Fuzzy Graph. If each graph vertices is adjacent then the proof is true. 0.0001 and 0.0002, 0.0003 are three vertices point. Now the point (0.0001, 0.0002) then the two point 0.0001 and 0.0002 are said to be end of the point or line in γ . Point and lines are change a name as signal tower and frequency line. each frequency lines are join with starting and ending point. In this case the author says γ is incident both of the ends. Also the signal points 0.0001 and 0.0002 are the parallel frequency line.

Then $\gamma = 0.0001 \ 0.0002 \ 0.0003$

$\gamma(0.0001) \wedge \gamma(0.0002) \wedge \gamma(0.0003)$

0.0003 is the another frequency line $\gamma(0.0003)$

$\gamma(0.0001, 0.0002, 0.0003)$

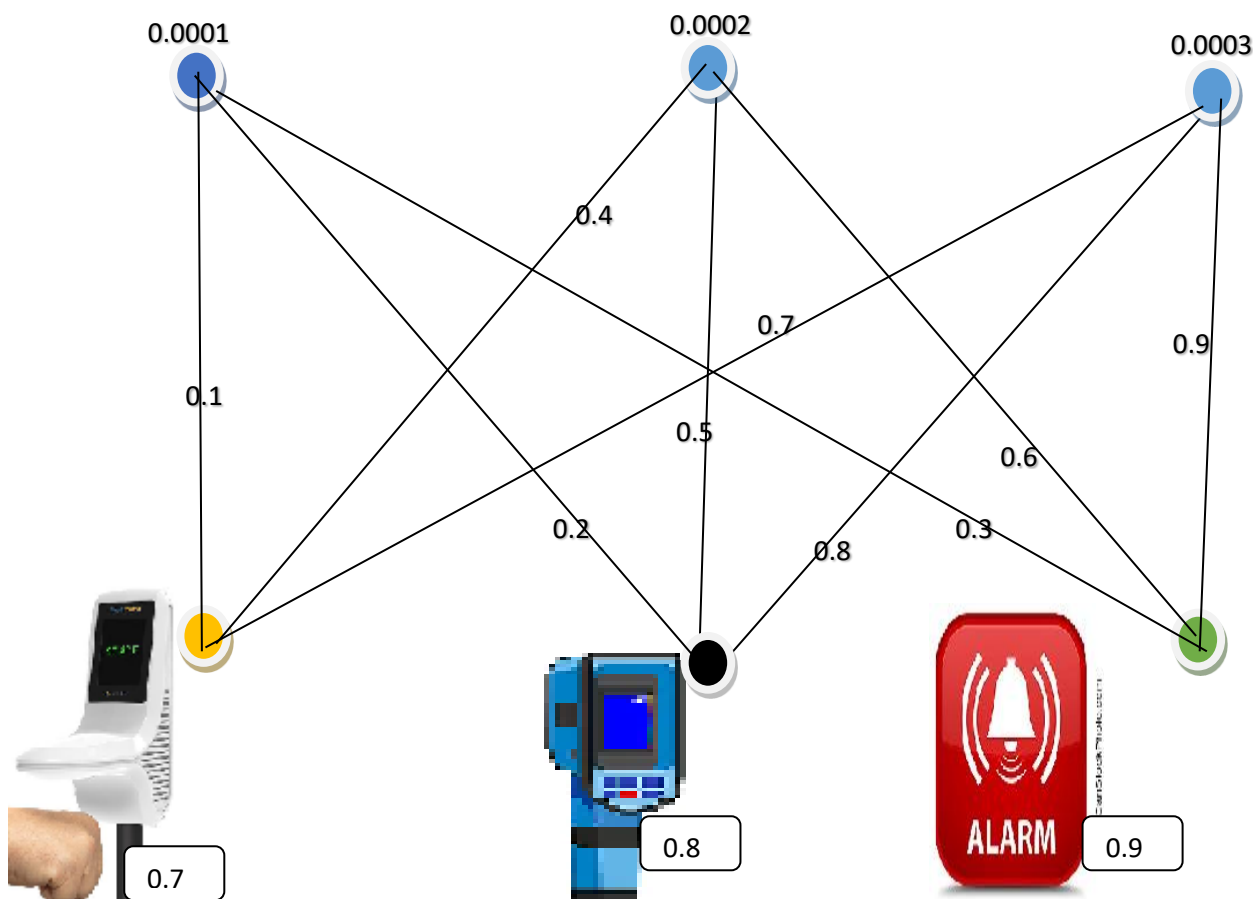
* 0.0001= (frequency line) scanner for Temperature and Vaccination Certificate

* 0.0002= Scanner for Covid19

0.0003= Beep sound For Unnecessary Symptoms

Example:

The complete bipartite fuzzy coloring graph is given below. Here three vertices as convert into frequency lines. The frequency line value as 0.0001, 0.0002 and 0.0003. this values are used to convert the scanner symptoms is positive or negative. Suppose it is positive automatically it will neutralize but it will come negative the alarm has been ringing frequently. Its application and how it will works and this condition will explained briefly in this paper.

**Figure: 1.1****Complete Bipartite Fuzzy Coloring Graph****3. COMPLETE BIPARTITE FUZZY COLORING GRAPH**

Let us consider the complete bipartite coloring fuzzy graph have 6 vertices and 3 edges. Each vertices and edges have fuzzy numbers this numbers are convert into frequency lines.. Now the author point of view the three vertices are consider as frequency numbers, this numbers used to find minute germs and unwanted symptoms in body. And all the edges are frequency lines, this lines helps to convert scanning result is positive or negative. Each frequency line have different fuzzy numbers. The fuzzy numbers are involve as wave length of the frequency speed. Each signal tower have reflecting sequence. If pass one tower it will be reflected all the tower and give the accurate result.

The author give a proof of this graph, Let us consider shopping mall, theater, or some crowed place. In the place is not safe for peoples anywhere. In this situation the author take a complete Bipartite Fuzzy Graph. It is a 6 vertices and each vertices have 3 edges graph. Now the six vertices are convert into 6 different things like scanner, alarm, etc. In this

scanner, alarm to fix the all over the place of entrance. Now the scanner cover the all the entire place of entrance. Let us consider each edges are convert into signal frequency. Each signal frequency have a different wave length. In this signal frequency are reflecting type of signals. Suppose one person pass the entrance the scanner will scanning automatically. If the scanning body is normal then the frequency will convert into natural suppose the body is abnormal like temperature is high then the frequency automatically pass through the germs finder. The germs finder analyze the full body and find any symptoms, its pass through the alarm line. so the alarm will ring and the man was stopped to entire. This kind of process is moving a fraction of the seconds because we use frequency seed time is 0.0001 and 0.0002 and 0.0003. In this frequency to set the entrance we will reduce to spread a corono virus one from others.

For Example:

If a person crossing through the first entrance gate Figure 1.1. The first entrance gate is 0.7 and second gate is 0.8. Suppose passing from 0.7 its scanner scanning full body and intimate 0.0003. 0.0003 is converter of the scanning report. If it's find positive activity, the frequency will pass to 0.8. This scanner will be natural. Suppose have find any negative activity, the frequency will go to the alarm section. The alarm will rang continuously. Using this concept give for a good result. From the following table we can find it's working rule and frequency wave length.

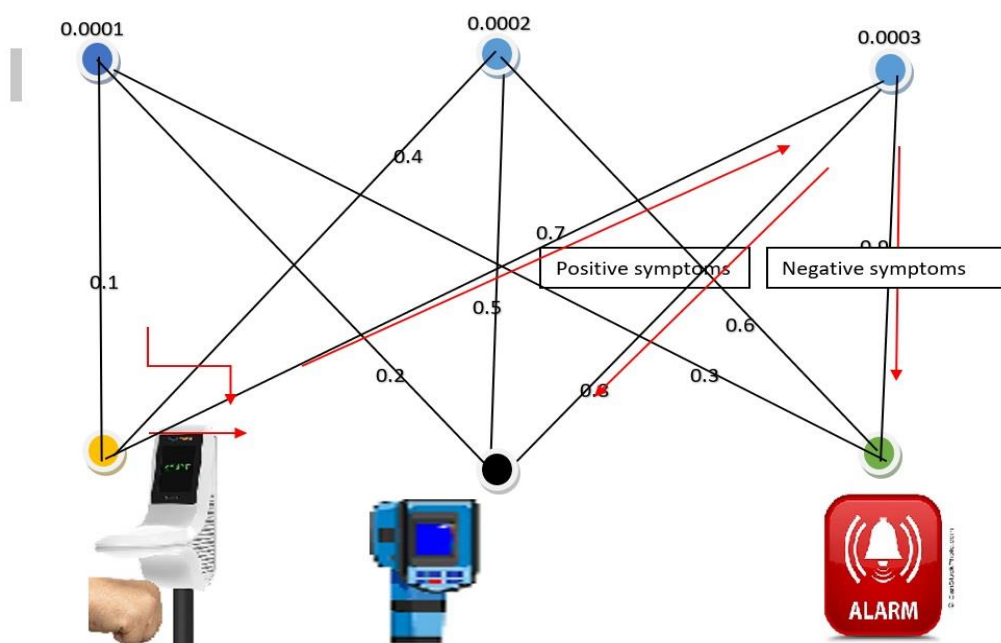


Figure 1.2 complete Bipartite fuzzy coloring Graph

From Figure 1.2, The entry point is denoted by blue mark. On entry point the scanner was scanning full body. Then passing through the result in 0.0003. the 0.0003 is a frequency converter. It is convert to the symptoms is positive or negative. It mentioned in figure 1.2. if the result is positive it will go to next scanner for natural. Suppose the result is negative then it will go to the alarm then the alarm was ring continuously.

The following tabulation will give the accurate result:

S.No	Entrance Gate	Frequency positive	Frequency Negative
1.	0.7 Scanner	0.7 → 0.0003 ↑ 0.8	0.0003 → 0.9
2.	0.8 Scanner	0.8 → 0.0001 ↑ 0.7	0.0001 → 0.9

From this table first entrance is 0.7 and second entrance is 0.8. Each entrance has germs scanner. All the scanner connected with alarm. If a person pass the first entrance 0.7. the 0.7 scanner scan the full body and convert to the frequency to 0.0003. the 0.0003 was analyze the symptoms and the symptoms is positive its pass through the alarm 0.9. Suppose the symptoms is negative it passes through the another scanner 0.7. The 0.7 works and naturalize the frequency signal. Continue this process for each and every person. So in this system definitely give the 90 percent success result. Let $\gamma_1, \gamma_2, \gamma_3, \gamma_4, \gamma_5, \gamma_6$ six tower name as 0.7, 0.8, 0.0003, 0.0001, 0.0002, 0.9 and $\gamma_1(v_i, v_j)$ maximum point of the signal wave length.

$$\gamma_1(v_i) = \begin{cases} 0.7 & i = 0.0003, \\ 0 & \text{otherwise;} \end{cases} \quad \gamma_1(v_i, v_j) = \begin{cases} 0.7 & ij = 0.8 \text{ or } 0.9 \\ 0 & \text{otherwise} \end{cases}$$

$$\gamma_2(v_i) = \begin{cases} 0.8 & i = 0.0001, \\ 0 & \text{otherwise;} \end{cases} \quad \gamma_2(v_i, v_j) = \begin{cases} 0.8 & ij = 0.8 \text{ or } 0.9 \\ 0 & \text{otherwise} \end{cases}$$

$$\gamma_3(v_i) = \begin{cases} 0.0003 & i = 0.7 \text{ or } 0.8, \\ 0 & \text{otherwise;} \end{cases} \quad \gamma_3(v_i, v_j) = \begin{cases} 0.0003 & ij = 0.9 \\ 0 & \text{otherwise} \end{cases}$$

$$\gamma_4(v_i) = \begin{cases} 0.0001 & i = ,0.7 \text{ or } 0.8 \\ 0 & \text{otherwise;} \end{cases} \quad \gamma_4(v_i, v_j) = \begin{cases} 0.0001 & ij = 0.9 \\ 0 & \text{otherwise} \end{cases}$$

$$\gamma_5(v_i) = \begin{cases} 0.0002 & i = ,0.7 \text{ or } 0.8 \\ 0 & \text{otherwise;} \end{cases} \quad \gamma_5(v_i, v_j) = \begin{cases} 0.0002 & ij = 0.9 \\ 0 & \text{otherwise} \end{cases}$$

$$\gamma_6(v_i) = \begin{cases} 0.9 & i = 0.7 \text{ or } 0.8, \\ 0 & \text{otherwise;} \end{cases} \quad \gamma_6(v_i, v_j) = \begin{cases} 0.9 & ij = 0.0001, 0.0002, 0.0003 \\ 0 & \text{otherwise} \end{cases}$$

Hence the group of family tower $\{\gamma_1, \gamma_2, \gamma_3, \gamma_4, \gamma_5, \gamma_6\}$ satisfies their reflection if the result is positive again it will go to scanner but the result is negative it will go to alarm. Every reflection have different type of wave length because the author give some result about this paper given below. The author give the distance of wave length in fuzzy number.

If the author select low frequency signal will passes through the same place like scanner and also reflection not much more better. If the frequency is high then the frequency value to reach alarm then the alarm were rang. we want to select as any one which is high. The selected frequency will pass at any one alarm it will reflect again and again. Using this concept the safe zone location is get as good.

4. CONCLUSION:

The author conclude this paper, easy to solve corona spread problem by using this method. At low cost cover all the people. In this paper have lot of technique, if we pass high frequency it will be reflected to alarm and get good safer side zone is soon its one major concept. And another one concept is list of graph will be increased and also vertices and edges are increased. If the frequency are increased then the scanner give an accurate result, frequency wave length also increases so the negative symptoms level get as good. And one more concept is all the vertices are adjacent so definitely link with all the scanner alarm and frequency converter. if any one frequency or scanner is lose it can't find accurate result. So we want to watch each and every time. Its only drawback of this method. If the condition is good if the result is also good.

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