A Study on Miracles through the Holy Bible using Modified Induced Fuzzy Relational Maps (MIFRM)

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ABSTRACT

This paper aims at studying at length the various reasons for miracles with incidents from the Holy Bible adopting the Modified Induced Fuzzy relational Maps, a generalization of Fuzzy Relational Maps. The content gives preliminaries of FRM and MIFRM with a descriptive account of the problem and the various miracles witnessed in the Bible using MIFRM. The data acquired is collated to conclude on the most essential component that results in the discharge of miracles in various instances.

Index Terms - Fuzzy Relational Maps, Modified Induced fuzzy relational Maps, Unsupervised, Bible.

1. INTRODUCTION

A Miracle is an event that apparently contradicts known scientific laws and is hence thought to be due to supernatural causes especially to an act of god. Miracles in the new testament had a purpose - miracles were performed to confirm the word (Mark 16:20), to create faith in Jesus Christ (John 20:30-31), to demonstrate that God is with Jesus (John 3:2), to prove that Jesus is the Christ, the Son of God, as prophesied (Matt 8:16-17). The New Testament narrates about thirty five miracles performed by Jesus. These miracles can be classified as Miracles of nature, Miracles of healing, and Miracles of resurrection. These miracles are listed below: [1]

Calming the storm	(Matthew 8:23-27)
Feeding five thousand	(Matthew 14:13-21)
Walking on water	(Matthew 14:22-33)
Feeding four thousand	(Matthew 15:32-38)
Coin in fish's mouth	(Matthew 17:24-27)
Fig tree withered	(Matthew 21:22)
Catch of fish	(Luke 5:1-11)
Water into wine	(John 2:1-11)
Another catch of fish	(John 21:1-11)
Cleansing of a Leper	(Matthew 8:2-4)
Centurion's servant	(Matthew 8:5-13)
Peter's mother-in-law	(Matthew 8:14-15)
Paralyzed man	(Matthew 9:2-8)
Woman with hemorrhage	(Matthew 9:20-22)
Man with withered hand	(Matthew 12:10-13)
Two blind men	(Matthew 9:27-31)
Canaanite woman	(Matthew 15:21-28)
Blind Bartimaeus	(Matthew 20:29-34)
Blind man at Bethsaida	(Mark 8:22-26)
Deaf and mute man	(Mark 7:32-37)
Crippled woman	(Luke 13:11-13)
Man with dropsy	(Luke 14:1-4)
Lepers	(Mark 7:11–19)
Malchus's ear	(Mark 22:50-51)
Capernaum Official's son	(John 4:46-54)
Sick at pool of Bethesda	(John 5:1-15)
Man blind from birth	(John 9:1-4)
Mutiple demon possessed man	(Matthew 8:16-17)
Gerasene demoniac	(Matthew 8:28-34)
Possessed man	(Matthew 9:32-34)
Possessed Blind Mute man	(Matthew 12:22-23)
Epileptic boy	(Matthew 17:14-21)
Possessed man	(Mark 1:23-26)
Widow's son	(Luke 7:11-17)
Jairus' daughter	(Matthew 9:18-19)
Rise of Lazarus	(John 11:1-44) [1].

The FRM model was introduced by W.B. Vasantha and Yasmin sultana in year 2000. This model is more applicable when the data in the first place is an unsupervised one. It is used to model several types of problems varying from gastric appetite behavior, popular political development etc. It is also used to model in robotics like plant control. This model works on the opinion of experts. This model has been used to study various social problems. In particular, the problem of health hazards faced by Rag pickers, the causes for school dropout which ultimately lead to child labour have been studied in the model. In order to bring out much stronger relationship among the attributes, a model called Modified Induced Fuzzy relational maps (MIFRM) was introduced by Thirusangu, K and P. Elumalai in the year 2012.

2. FUZZY RELATIONAL MAPS (FRMS):

2.1 Preliminaries:[2]

In our study, the elements of the domain space are taken from the real vector space of dimension n and that of the range space are real vectors from the vector space of dimension m (m in general need not be equal to n). We denote by R the set of nodes $R_1, \ldots, R_m$ of the range space, where $R_i = \{(x_1, x_2, \ldots, x_m) / x_j = 0 \text{ or } 1\}$ for $i = 1, \ldots, m$. If $x_i = 1$ denotes the node R_i is in the ON state and if $x_i = 0$ denotes the node R is in the OFF state. Similarly D denotes the nodes

$D_1, D_2, \ldots, D_n$ of the domain space where $D_i = \{(x_1, x_2, \ldots, x_n) / x_j = 0 \text{ or } 1\}$ for $i = 1, \ldots, n$. If $x_i = 1$, denotes the node D_i is in the ON state and if $x_i = 0$ denotes the node D_i is in the OFF state.

Definition: 2.1.1: A FRM is a directed graph or a map from Domain Space to Range Space with concepts like policies or events etc. as nodes and causalities as edges. It represents casual relations between spaces D and R.

Definition 2.1.2: The directed edge from D to R denotes the casuality of D on R, called relations. Every edge in the FRM is weighted with a number in the set {0, 1}.

Definition 2.1.3: Let D_i and R_j denote the two nodes of an FRM. Let e_{ij} be the weight of the edge $D_i R_j$, $e_{ij} \in \{0.1\}$. The weight of the edge D_iR_j is positive if increase in D_i implies increase in R_j or decrease in Di implies decrease in R_j. i.e., casuality of D_i on R_j is 1. If $e_{ij} = 0$ then D_i does not have any effect on R_j. We do not discuss the cases when increase in D_i implies decrease in R_j or decrease in D_i implies increase in R_j. When the nodes of the FRM are fuzzy sets, then they are called fuzzy nodes, FRMs with edge weights {0, 1} are called simple FRMs. Let $D_1, \ldots, D_n$ be the nodes of the domain space D of an FRM and $R_1, \ldots, R_m$ be the nodes of the range space R of an FRM.

Definition 2.1.4: Let the matrix E be defined as $E = (e_{ij})$ where $e_{ij} \in \{0, 1\}$; is the weight of the directed edge D_iR_j (or R_jD_i), E is called the relational matrix of the FRM. It is pertinent to mention here that unlike the FCMs, the FRMs can be a rectangular matrix; with rows corresponding to the domain space and columns corresponding to the range space. This is one of the marked differences between FRMs and FCMs.

Definition 2.1.5: Let $D_1, \ldots, D_n$ and $R_1, \ldots, R_m$ be the nodes of an FRM. Let D_iR_j (or R_jD_i) be the edges of an FRM, j = 1, 2, …, m, i = 1, 2, …, n. The edges form a directed cycle if it possesses a directed cycle. An FRM is said to be a cycle if it does not possess any directed cycle.

Definition 2.1.6: An FRM with cycles is said to have a feed back when there is a feed back in the FRM, i.e. when the casual relations flow through a cycle in a revolutionary manner the FRM is called a dynamical system.

Definition 2.1.7: Let D_iR_j (or R_jD_i), $1 \leq j \leq m$, $1 \leq i \leq n$. When R_j (or D_i) is switched on and if causality flows through edges of the cycle and if it again causes R_i (D_j), we say that the dynamical system goes round and round. This is true for any node R_j (or D_j) for $1 \leq i \leq m$, (or $1 \leq j \leq n$). The equilibrium state of this dynamical system is called the hidden pattern. If the equilibrium state of the dynamical system is a unique state vector, then it is called a fixed point. Consider an FRM with $R_1 \ldots R_m$ and $D_1 \ldots D_n$ as nodes. For example let us start the dynamical system by switching on R_1 or D_1. Let us assume that the FRM settles down with R_1 and R_m (or D_1 and D_n) on i.e. the state vector remains as (1 0 … 0 1) in R [or (1 0 … 0 1) in D], this state vector is called the fixed point. If the FRM settles down with a state vector repeating in the form $A_1 \rightarrow A_2 \rightarrow \ldots \rightarrow A_i \rightarrow A_1$ or ($B_1 \rightarrow B_2 \ldots B_i \rightarrow B_1$) then this equilibrium is called a limit cycle.

3. METHOD OF DETERMINATION OF HIDDEN PATTERN

Let $R_1, \ldots, R_m$ and $D_1, \ldots, D_n$ be the nodes of a FRM with feedback. Let E be the $n \times m$ relational matrix. Let us find a hidden pattern when D_1 is switched on i.e. when an input is given as vector A_1 = (1 0 0 0 ... 0) in D the data should pass through the relational matrix M. This is done by multiplying A_1 with the relational matrix M. Let $A_1M = (k_1, \ldots, k_m)$ after thresholding and updating the resultant vector (say B)belongs to R. Now we pass on B into MT and obtain BMT. After thresholding and updating BMT we see the resultant vector say A_2 belongs to D. This procedure is repeated till we get a limit cycle or a fixed point.

4. MODIFIED INDUCED FUZZY RELATIONAL MAPS (MIFRM)[3]

Suppose that there are n attributes, say $X_1, \ldots, X_n$ where n is finite, associated with a domain and let $Y_1, \ldots, Y_p$ be the attributes associated with another domain. The connection matrix M of order $n \times p$ is obtained through the expert.

Let C_1 be the initial input vector of order $1 \times n$. A particular component, say C_1, is kept on ON state and all other components on OFF state and pass the state vector C_1 through the connection matrix M.

To convert the resultant vector into a signal function, choose the first two highest values to ON state and other values to OFF state with 1 and 0 respectively.

Denote this process by the symbol.

The resulting vector is multiplied with M^T and thresholding yields a new vector D_1.

This resulting vector is related with the connection matrix and that vector which gives the highest number of attributes to ON state is choose as C_2. That is, for each positive entry we get a set of resultant vectors.

Among these vectors choose two vectors, out of which one with maximum number of 1's and another with next maximum number of 1's. A new vector C_2 is obtained by merging these two vectors.

If there are two or more vectors with equal number of 1's as ON state, choose the first occurring one as C_2. Repeat the same procedure till a fixed point or a limit cycle is obtained.

This process is done to give due importance to each vector separately as one vector induced another or many more vector into ON state. Get the hidden pattern by the limit cycle or by getting a fixed point.

Next choose the vector with its second component in ON state and repeat the same process to get another cycle. This process was repeated for all the vectors separately. We observe the hidden pattern of some vectors found in all or many cases. Inference from this hidden pattern highlights the causes.

5. DESCRIPTION AND ADOPTION OF MIFRM MODEL TO STUDY ABOUT MIRACLES USING HOLY BIBLE.

A survey of around 50 Believers, priest and Pasteur living in Chennai was taken using a questionnaire. From the feedback, nodes were identifies as domain space and range space and reasons for miracles in the Holy bible were charted out to bring out the strong relationship among the attributes, using Modified Induced Fuzzy relational maps (MIFRM)

S_1 Human attitudes identified that release the power of Christ as miracles (domain space) include:[8]

D_1 Faith
Faith is the substance of hope Heb 11:1
Faith is the foundation of our hope:
Rom 8:24.25
Faith is the "title-deed" our pledge to things hope
Heb 3:14
Faith is the conviction of things not seen
Heb 11:3
Faith accepts even that which appears unreasonable
Rom 4:1

Trusting commitment of one person to another, particularly of a person to God. Faith is the central concept of Christianity. One may be called a Christian only if one has faith.

D_2 Hearing the word of God
So then, faith cometh by hearing, and hearing by the word of God, ie., hearkening to a higher authority.
Rom 10:17

D_3 Repentance
A feeling of regret, a changing of the mind, or a turning from sin to God.
(Genesis 6:6-7/ (1 Samuel 15:11,/1 Samuel 15:35) / (Exodus 32:14).

D_4 Obedience
"To hear God's Word and act accordingly."
The person's obedient response to God's Word is a response of trust or faith. Thus, to really hear God's Word is to obey God's Word (Exodus 19:5; Jeremiah 7:23).

D_5 Trust
Confidence, a reliance or resting of the mind on the integrity, veracity, justice, friendship or other sound principle of another person, He that putteth his trust in the lord shall be safe (prov 29)

D_6 Endurance
"Stand one's ground; persevere; remain steadfast," and 'endure'. (Mt. 24:13) endurance" that does not lose hope in the face of obstacles, persecutions, trials, or temptations.

D_7 Humility
A personal quality in which an individual shows dependence on God and respect for other persons.

A recognition of one's sinfulness before a holy God obedience to God and submission to God
(Psalms 51:17; Micah 6:8) (Isaiah 6:5(Deuteronomy 8:2(2 Kings 22:19; 2 Chronicles 34:37).

D_8 Complete surrender/ whole hearted acceptance
It means being received with approval or pleasure. In the Bible, things or persons are often said to be acceptable to men or to God. Divine acceptance is more important.
(Genesis 4:7; Isaiah 59:2) Amos 6:6-8
Psalms 51:16-17; 1 Peter 5:5-6)

D_9 Persistence/ Perseverance in prayer
Maintaining Christian faith through the trying times of life.
(Ephesians 6:18; Philippians 4:6) Ephesians 6:18
Hebrews 12:1

S_2 Emotional Quotient (EQ) of Christ while performing miracles(Range space)[9]

R_1 Authority in the spiritual realm

In biblical usage, describes the absolute power and freedom of God, and claims that he is the source of all other authorization or power. "exousia" expresses both freedom and legal rights, in Greek
"There is no authority except from God" (Romans 13:1 RSV; see John 19:11). "Exousia" describes first the freedom of God to act (Luke 15:5; Acts 1:7). Second, it signifies the divinely given power and authority of Jesus Christ as deriving from the father (Matthew 28:18; John 10:18; John 17:2), enabling him to forgive sin (Mark 2:10), and signifying his power to heal and to expel demons, which he gave his disciples (Mark 3:15).

R_2 Obedience to the Father
Christ's obedience stands in contrast to Adam's disobedience (Romans 5:12-21). A desire to obey the will of God motivated Jesus' actions (Luke 4:43; John 5:30). Jesus acted and spoke only as the father directed (John 3:34). By living a life of obedience, Jesus showed himself to be the Savior (Hebrews 5:7-10). Christ's work on the cross is viewed as a sacrifice of obedience (Romans 5:19; Hebrews 10:7-10).

R_3 Compassion
To feel passion with someone to enter sympathetically into their sorrow and pain.
(Philippians 1:8), Compassion finds its source in God's compassion (James 5:11). In compassion he has provided salvation and forgiveness (Luke 1:78).

R_4 Patience
An active endurance of opposition, not a passive resignation. Patience is endurance, steadfastness, long suffering, and forbearance.
God is patient (Romans 15:5). He is slow to anger in relation to the Hebrews (Exodus 34:6; Numbers 14:18,Nehemiah 9:17; Psalms 86:15; Isaiah 48:9; Hosea 11:8-9).

R_5 Mercy/ Merciful
A personal characteristic of care for the needs of others.
God's mercy is bound up with his covenant with Israel. He is merciful to them. Because he chose them (Exodus 33:19; 2 Kings 13:23; Isaiah 54:10, Isaiah 63:7). God's mercy is never just a feeling but is expressed by his action: Providing for Israel in the wilderness (Nehemiah 9:19; Isaiah 49:10) and delivering her from enemies (Psalms 69:16-21;Psalms 79: 8-11; Isaiah 30:18; Jeremiah 42:11-12).
God's mercy is the very source of his people's life (Psalms 103:4; Psalms 119:1).

R_6 Loving
Unselfish, loyal, and benevolent concern for the well-being of another. In 1 Corinthians 13:1, Paul described "love" as a "more excellent way" than tongues or even preaching. The New Testament maintains this estimation of love throughout. It is a relationship of self-giving which results from God's activity in Christ. The source of Christian love is God

(Romans 5:8), and the believer's response of faith makes love a human possibility (Romans 5:5).

R_7 Forgiving/ Forgiveness
An act of God's grace to forget forever and not hold people of faith accountable for sins they confess; to a lesser degree the gracious human act of not holding wrong acts against a person. Forgiveness has both divine and human dimensions. In the divine relationship, it is first of all, the gracious act of God by which believers are put into a right relationship to God and transferred from spiritual death to spiritual life through the sacrifice of Jesus.

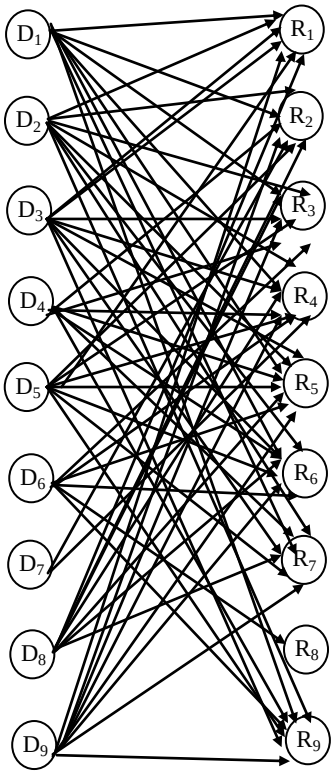
Jesus is the perfect and final Sacrifice through which God's forgiveness is mediated to every person (Romans 3:25; Hebrews 10:11-12).

R_8 Restraint/ Anger
To hold back to check , to hold from action proceeding or advancing, either by physical or moral force, or by an interposing obstacle.

R_9 Forbearance
Forbearance refers to God's patience expressed in God's willingness to hold back judgment for a time.

Now using the expert's opinion. From the figure given below the following relation matrices obtained .By taking Human attitudes that release the power of Christ as miracles D_1, D_2, D_3 ,…, D_9 as the rows and Emotional Quotient (EQ) of Christ while performing miracles R_1, R_2, R_3 ,…, R_9 as the columns.

6. EXPERT OPINION



(Fig)

$$E_1 = \begin{array}{c} \\ C_1 \\ C_2 \\ C_3 \\ C_4 \\ C_5 \\ C_6 \\ C_7 \\ C_8 \\ C_9 \end{array} \begin{array}{c} \begin{array}{ccccccccc} R_1 & R_2 & R_3 & R_4 & R_5 & R_6 & R_7 & R_8 & R_9 \end{array} \\ \begin{pmatrix} 1 & 1 & 1 & 1 & 1 & 1 & 1 & -1 & 1 \\ 1 & 1 & 1 & 1 & 1 & 1 & 1 & 0 & 1 \\ 1 & 1 & 1 & 1 & 1 & 1 & 1 & -1 & 1 \\ 0 & 1 & 1 & 1 & 1 & 1 & 1 & 0 & 1 \\ 1 & 1 & 1 & 1 & 1 & 1 & 1 & -1 & 1 \\ 0 & 0 & 1 & 1 & 1 & 1 & -1 & 1 & 1 \\ 0 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 1 & 1 & 1 & 1 & 1 & 1 & 1 & 0 & 1 \\ 1 & 1 & 1 & 1 & 1 & 1 & 1 & -1 & 1 \end{pmatrix} \end{array}$$

A_1 = (1 0 0 0 0 0 0 0 0)
A_1E = (1 1 1 1 1 1 1 –1 1) →
(1 1 1 1 1 1 1 0 1) = B_1

$B_1 E_1^T$ = (8 8 8 7 8 6 2 8 8) →
(1 1 1 1 1 1 1 1 1) = A_2

$A_2 E_1$ = (6 8 8 9 8 8 8 –5 8)
→ (1 1 1 1 1 1 1 0 1) = B_2

$B_2 E_1^T$ = (8 8 8 7 8 6 2 8 8) → (1 1 1 1 1 1 1 1 1)
= A_3

(where → denotes the resultant vector after thresholding and updating)
$A_2 = A_3$.

Hence the pair of limit point is
(1 1 1 1 1 1 1 1 1) (111111 1 0 1)

The limit points for different inputs are given in the following table.

Step no	INPUT VECTOR	LIMIT POINT
1	(1 0 0 0 0 0 0 0 0)	(1 1 1 1 1 1 1 1 1) (1 1 1 1 1 1 1 0 1)
2	(0 1 0 0 0 0 0 0 0)	(1 1 1 1 1 1 1 1 1) (1 1 1 1 1 1 1 0 1)
3	(0 0 1 0 0 0 0 0 0)	(1 1 1 1 1 1 1 1 1) (1 1 1 1 1 1 1 0 1)
4	(0 0 0 1 0 0 0 0 0)	(1 1 1 1 1 1 1 1 1) (1 1 1 1 1 1 1 0 1)
5	(0 0 0 0 1 0 0 0 0)	(1 1 1 1 1 1 1 1 1) (1 1 1 1 1 1 1 0 1)
6	(0 0 0 0 0 1 0 0 0)	(1 1 1 1 1 1 1 1 1) (1 1 1 1 1 1 1 0 1)
7	(0 0 0 0 0 0 1 0 0)	(1 1 1 1 1 1 1 1 1) (1 1 1 1 1 1 1 0 1)
8	(0 0 0 0 0 0 0 1 0)	(1 1 1 1 1 1 1 1 1) (1 1 1 1 1 1 1 0 1)
9	(0 0 0 0 0 0 0 0 1)	(1 1 1 1 1 1 1 1 1) (1 1 1 1 1 1 1 0 1)

7. USING MODIFIED INDUCED FUZZY RELATIONAL MAPS (MICFRM)

C_1 = (1 0 0 0 0 0 0 0 0)
C_1E_1 = (1 1 1 1 1 1 1 –1 1) →
(1 1 1 1 1 1 1 0 1) = B_1
$B_1 E_1^T$ = (8 8 8 7 8 6 2 8 8) →
(1 1 1 1 1 1 1 1 1) = C_1'

The new vectors are
C_1^1 = (1 0 0 0 0 0 0 0 0)
C_1^2 = (0 1 0 0 0 0 0 0 0)
C_1^3 = (0 0 1 0 0 0 0 0 0)
C_1^4 = (0 0 0 1 0 0 0 0 0)
C_1^5 = (0 0 0 0 1 0 0 0 0)
C_1^6 = (0 0 0 0 0 1 0 0 0)
C_1^7 = (0 0 0 0 0 0 1 0 0)
C_1^8 = (0 0 0 0 0 0 0 1 0)
C_1^9 = (0 0 0 0 0 0 0 0 1)

Case 1
(1 0 0 0 0 0 0 0 0)E_1 = (1 1 1 1 1 1 1 -1 1) →
(1 1 1 1 1 1 1 0 1)
(1 1 1 1 1 1 1 0 1)E_1^T = (8 8 8 7 8 6 2 8 8) →
(1 1 1 1 1 1 1 1 1), row sum is 9.

Case 2
(0 1 0 0 0 0 0 0 0)E_1 = (1 1 1 1 1 1 1 0 1) →
(1 1 1 1 1 1 1 0 1)

(1 1 1 1 1 1 1 0 1) E_1^T = (8 8 8 7 8 6 2 8 8) →
(1 1 1 1 1 1 1 1 1), row sum is 9.

Case 3
(0 0 1 0 0 0 0 0 0)E_1 = (1 1 1 1 1 1 1 -1 1) →
(1 1 1 1 1 1 1 0 1)

(1 1 1 1 1 1 1 0 1)E_1^T = (8 8 8 7 8 6 2 8 8) →
(1 1 1 1 1 1 1 1 1), row sum is 9.

Case 4
(0 0 0 1 0 0 0 0 0)E_1 = (0 1 1 1 1 1 1 0 1) →
(0 1 1 1 1 1 1 0 1)

(0 1 1 1 1 1 1 0 1) E_1^T = (7 7 7 7 7 6 2 7 7)
(1 1 1 1 1 1 1 1 1), row sum is 9.

Case 5
(0 0 0 0 1 0 0 0 0)E_1 = (1 1 1 1 1 1 1 -1 1) →
(1 1 1 1 1 1 1 0 1)

(1 1 1 1 1 1 1 0 1) E_1^T = (8 8 8 7 8 6 2 8 8) →
(1 1 1 1 1 1 1 1 1), row sum is 9.

Case 6
(0 0 0 0 0 1 0 0 0)E = (0 0 1 1 1 1 1-1 1)→
(0 0 1 1 1 1 1 0 1)

(0 0 1 1 1 1 1 1 0 1)E_1^T = (6 6 6 6 6 6 1 6 6) →
(1 1 1 1 1 1 1 1 1), row sum is 9.

Case 7
(0 0 0 0 0 0 1 0 0)E_1 = (0 1 0 1 0 0 0 0 0) →
(0 1 0 1 0 0 0 0 0)

(0 1 0 1 0 0 0 0 0) E_1^T = (2 2 2 2 2 1 2 2 2) →
(1 1 1 1 1 1 1 1 1), row sum is 9.

Case 8
(0 0 0 0 0 0 0 1 0)E_1 = (1 1 1 1 1 1 1 0 1) →
(1 1 1 1 1 1 1 0 1)

(1 1 1 1 1 1 1 0 1)E_1T = (8 8 8 7 8 6 2 8 8) →
(1 1 1 1 1 1 1 1 1), row sum is 9.

Case 9
(0 0 0 0 0 0 0 0 1)E_1 = (1 1 1 1 1 1 1 -1 1) →
(1 1 1 1 1 1 1 0 1)

(1 1 1 1 1 1 1 0 1) E_1^T = (8 8 8 7 8 6 2 8 8) →
(1 1 1 1 1 1 1 1 1), row sum is 9.

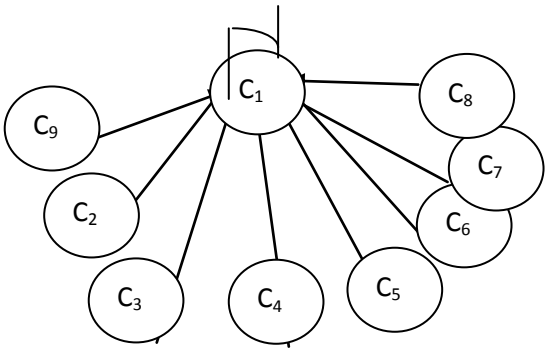
Therefore new input vector
C_2 = (1 1 1 1 1 1 1 1 1)
C_2E_1 = (6 8 8 9 8 8 8 -5 8)
→ (1 1 1 1 1 1 1 0 1)= B_2
$B_2E_1^T$ = (8 8 8 7 8 6 2 8 8)
→(1 1 1 1 1 1 1 1 1)=C'_2.

$C'_1 = C'_2$

The binary pair of limit point is
(1 1 1 1 1 1 1 1 1) (1 1 1 1 1 1 1 0 1)

Step no	INPUT VECTOR	LIMIT POINT	Triggering patterns
1	(1 0 0 0 0 0 0 0 0)	(1 1 1 1 1 1 1 1 1) (1 1 1 1 1 1 1 0 1)	$C_1 \Rightarrow C_1$
2	(0 1 0 0 0 0 0 0 0)	(1 1 1 1 1 1 1 1 1) (1 1 1 1 1 1 1 0 1)	$C_2 \Rightarrow C_1$
3	(0 0 1 0 0 0 0 0 0)	(1 1 1 1 1 1 1 1 1) (1 1 1 1 1 1 1 0 1)	$C_3 \Rightarrow C_1$
4	(0 0 0 1 0 0 0 0 0)	(1 1 1 1 1 1 1 1 1) (1 1 1 1 1 1 1 0 1)	$C_4 \Rightarrow C_1$
5	(0 0 0 0 0 1 0 0 0)	(1 1 1 1 1 1 1 1 1) (1 1 1 1 1 1 1 0 1)	$C_5 \Rightarrow C_1$
6	(0 0 0 0 0 0 1 0 0 0)	(1 1 1 1 1 1 1 1 1) (1 1 1 1 1 1 1 0 1)	$C_6 \Rightarrow C_1$
7	(0 0 0 0 0 0 0 1 0 0)	(1 1 1 1 1 1 1 1 1) (1 1 1 1 1 1 1 0 1)	$C_7 \Rightarrow C_1$
8	(0 0 0 0 0 0 0 0 1 0)	(1 1 1 1 1 1 1 1 1) (1 1 1 1 1 1 1 0 1)	$C_8 \Rightarrow C_1$
9	(0 0 0 0 0 0 0 0 0 1)	(1 1 1 1 1 1 1 1 1) (1 1 1 1 1 1 1 0 1)	$C_9 \Rightarrow C_1$

The merged graph triggering pattern



8. CONCLUSION

While analyzing MIFRM, when the concept D_1 "faith is in the on state, the other concepts D_2, D_3, D_4, D_5, D_6, D_7, D_8, D_9, are also in the on state.

Thus it is concluded that Faith strengthens prayer , which in turn gives one the patience to wait on God and re-inforce the fact that belief in God and His promises would fetch imperishable rewards in the Heavenly realm.
"But without faith it is impossible to please him" (Hebrews 11:6)

Strong faith is a compass that indicates how God will supply those needs
"Receiving basic physical needs (Matt 6:31-32)

Having wisdom to know what to say in tough witnessing situations (Matt 10:18-20)
Knowing how to pray (Rom 8:26)
Dealing with suffering (Rom 8:18-30)
Coping with illness (2 cor.12:7-10)
Resisting temptation (Rom .6:1-23)
Overcoming worry (1 pet.5:7)
Coping with trials (Jas.1:5)
Facing intense pressures (2 Cor.1:8-11)
Needing comfort (2 Cor .1:3-7)

Some of results given by experts on how faith leads to miracles are given below:

1. The centurion's servant, (Matt 8:5-13,Luke 7:1-10)
2. The afflicted woman (Matt 9:20-22,mark 5:25-34)
3. The demoniac boy (Matt 17:14-21,mark 9:14-29)
4. The Ten lepers (Luke 17:11-19)
5. The Daughter of Jairus raised
6. The Two blind men near Jericho.

SUGGESTIONS:

The five phases of Faith go hand in hand with five fundamental truths of god
God has a plan for me
God is with me
God will make a way
God isn't surprised by death
God brings dreams to life
Faith is a gift of god (Rom 12:3)
We are sanctified by faith (Acts 26:18)
Jesus Christ dwells in our heart by faith (Galatians 3:22)
God's grace is received by faith (Ephesians 2:8)

FAITH IN EXERCISE
Justified by faith (Rom :5 :1)-our release
Saved through Faith (Eph .2:8) –our Deliverance
Sanctified by Faith (Acts 26:18)-our position
Purified by Faith (Acts 15:9)- Our Condition.

FAITH'S PROGRESS (as recorded in Psalm 37)
Trust in the lord – salvation
Delight in the lord –Communion
Commit thy Way to the lord –Guidance
Rest in the Lord –Patience
Wait on the lord –Hope

PRECIOUS FAITH (as recorded 2peter 1:1)
The word of Faith (Rom.10:8)-Christ's work
The object of faith (Eph.1:13) Christ's person
The basis of Faith (Rom .10:17)-God's word
The result of Faith (Eph.2:8)-Man's Salvation
Faith is a gift of god (Rom 12:3)
we are sanctified by Faith (Acts 26:18)
Jesus Christ dwells in our heart by faith (Galatians 3:22)
God's grace is received by faith (Ephesians 2:8)

9. FUTURE WORK

Miracles will be analyzed by using fuzzy model.

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