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The Interesting and Complete Artificial Intelligence (ICAI) – Version 1

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ABSTRACT

A new field titled "The Interesting and Complete Artificial Intelligence (ICAI)" is invented in this work. In this article, we define this new ICAI field. Four new ICAI algorithms are designed in this work. This paper titled "The Interesting and Complete Artificial Intelligence (ICAI) – Version 1" is just the starting point of this new field. We request Research Scientists across the globe to work in this new direction of Artificial Intelligence and publish their work with titles such as "The Interesting and Complete Artificial Intelligence (ICAI) – Version 1.1", "The Interesting and Complete Artificial Intelligence (ICAI) – Version 2" or "The Interesting and Complete Artificial Intelligence (ICAI) – Final Version".

Keywords: Interesting, Complete, Interesting and Complete Artificial Intelligence, Artificial Intelligence, AI, ICAI

DEFINITION OF THE INTERESTING AND COMPLETE ARTIFICIAL INTELLIGENCE FIELD

In this work we took inspiration from "Friendship", "Brotherhood", "Mother and Son" and "Husband and Wife" and designed four new algorithms. The goal of this project is that the concepts like "Friendship", "Brotherhood", "Mother and Son" and "Husband and Wife" would make the current Artificial Intelligence Interesting and Complete. Hence we have defined this new field with title "The Interesting and Complete Artificial Intelligence (ICAI)" as below:

> *All the Artificial Intelligence Algorithms (AI Algorithms) which are inspired from "Friendship", "Brotherhood", "Mother and Son" and "Husband and Wife" will become part of new field titled "The Interesting and Complete Artificial Intelligence (ICAI)".*

LITERATURE REVIEW

There are no "The Interesting and Complete Artificial Intelligence (ICAI)" field algorithms designed in literature till date. The World's First ICAI algorithm is designed in this project. For the sake of completeness, we are showing Artificial Intelligence Literature [1] to [25] from previous article of Satish Gajawada et al titled "Ten Artificial Human Optimization Algorithms" published at "Transactions on Machine Learning and Artificial Intelligence, United Kingdom".

ARTIFICIAL FRIENDSHIP ALGORITHM

Artificial Friendship Algorithm is based on two friends "Friend One" and "Friend Two". Based on random number generated in line number 6 and FriendOneProbabaility the person is

identified as Friend One or Friend Two. Friend One is strong and hence always updates position and velocity irrespective of anything. Friend Two is weak. Based on random number generated and HelpOfFriendOneProbability in line number 10 the Friend Two either receives help from Friend One or not. Friend Two moves in search space and updates position and velocity when he receives help from Friend One. Friend Two without help from Friend One is halted and does nothing. Figure 1 shows Artificial Friendship Algorithm.

```
1) All Artificial Friend Ones and Artificial Friend Twos are initialized
2) Iterations count is set to zero
3) Identify local best of all Artificial Friend Ones and Artificial Friend Twos
4) Identify global best of all Artificial Friend Ones and Artificial Friend Twos
5)      for each particle i do
6)              if ( generate_random_number (0,1) < FriendOneProbability ) then // Friend One
7)                      Update Velocity of Artificial Friend One
8)                      Update Position of Artificial Friend One
9)              else // Friend Two
10)                     if ( random(0,1) < HelpOfFriendOneProbability) then // Friend Two with
Help
11)                                     Update Velocity of Friend Two
12)                                     Update Position of Friend Two
13)                     else // Friend Two without help does nothing
14)
15)                     end if
16)             end if
17)     end for
18)     generations (iterations) = generations (iterations) + 1
19) while ( termination_condition not reached is true)
```

Figure 1. Artificial Friendship Algorithm

ARTIFICIAL BROTHERHOOD ALGORITHM

Artificial Brotherhood Algorithm is based on two brothers “Brother One” and “Brother Two”. Based on random number generated in line number 6 and BrotherOneProbabaility the person is identified as Brother One or Brother Two. Brother One is strong and hence always updates position and velocity irrespective of anything. Brother Two is weak. Based on random number generated and HelpOfBrotherOneProbability in line number 10 the Brother Two either receives help from Brother One or not. Brother Two moves in search space and updates position and velocity when he receives help from Brother One. Brother Two without help from Brother One is halted and does nothing. Figure 2 shows Artificial Brotherhood Algorithm.

```
1) All Artificial Brother Ones and Artificial Brother Twos are initialized
2) Iterations count is set to zero
3) Identify local best of all Artificial Brother Ones and Artificial Brother Twos
4) Identify global best of all Artificial Brother Ones and Artificial Brother Twos
5)      for each particle i do
6)              if ( generate_random_number (0,1) < BrotherOneProbability ) then // Brother
One
7)                      Update Velocity of Artificial Brother One
```

```
8)                    Update Position of Artificial Brother One
9)          else // Brother Two
10)                 if ( random(0,1) < HelpOfBrotherOneProbability) then // Brother Two with Help
11)                       Update Velocity of Brother Two
12)                          Update Position of Brother Two
13)                 else // Brother Two without help does nothing
14)
15)                 end if
16)         end if
17)   end for
18)   generations (iterations) = generations (iterations) + 1
19) while ( termination_condition not reached is true)
```

Figure 2. Artificial Brotherhood Algorithm

ARTIFICIAL MOTHER AND SON ALGORITHM

Artificial Mother and Son Algorithm is based on "Mother" and "Son". Based on random number generated in line number 6 and MotherProbability the person is identified as Mother or Son. Mother is strong and hence always updates position and velocity irrespective of anything. Son is weak. Based on random number generated and HelpOfMotherProbability in line number 10 the Son either receives help from Mother or not. Son moves in search space and updates position and velocity when he receives help from Mother. Son without help from Mother is halted and does nothing. Figure 3 shows Artificial Mother and Son Algorithm.

```
1) All Artificial Mothers and Artificial Sons are initialized
2) Iterations count is set to zero
3) Identify local best of all Artificial Mothers and Artificial Sons
4) Identify global best of all Artificial Mothers and Artificial Sons
5)    for each particle i do
6)          if ( generate_random_number (0,1) < MotherProbability ) then // Mother
7)                Update Velocity of Artificial Mother
8)                 Update Position of Artificial Mother
9)          else // Son
10)               if ( random(0,1) < HelpOfMotherProbability) then // Son with Help
11)                     Update Velocity of Son
12)                        Update Position of Son
13)               else // Son without help does nothing
14)
15)               end if
16)         end if
17)   end for
18)   generations (iterations) = generations (iterations) + 1
19) while ( termination_condition not reached is true)
```

Figure 3. Artificial Mother and Son Algorithm

ARTIFICIAL HUSBAND AND WIFE ALGORITHM

Artificial Husband and Wife Algorithm is based on "Wife" and "Husband". Based on random number generated in line number 6 and WifeProbabaility the person is identified as Husband or Wife. Wife is strong and hence always updates position and velocity irrespective of anything. Husband is weak. Based on random number generated and HelpOfWifeProbability in line number 10 the Husband either receives help from Wife or not. Husband moves in search space and updates position and velocity when he receives help from Wife. Husband without help from Wife is halted and does nothing. Figure 4 shows Artificial Husband and Wife Algorithm.

```
1) All Artificial Wifes and Artificial Husbands are initialized
2) Iterations count is set to zero
3) Identify local best of all Artificial Wifes and Artificial Husbands
4) Identify global best of all Artificial Wifes and Artificial Husbands
5)      for each particle i do
6)              if ( generate_random_number (0,1) < WifeProbability ) then // Wife
7)                      Update Velocity of Artificial Wife
8)                       Update Position of Artificial Wife
9)              else // Husband
10)                     if ( random(0,1) < HelpOfWifeProbability) then // Husband with Help
11)                             Update Velocity of Husband
12)                               Update Position of Husband
13)                     else // Husband without help does nothing
14)
15)                     end if
16)             end if
17)     end for
18)     generations (iterations) = generations (iterations) + 1
19) while ( termination_condition not reached is true)
```

Figure 4. Artificial Husband and Wife Algorithm

CONCLUSIONS

A Revolutionary direction in Artificial Intelligence Research Industry History is opened in this work with title "The Interesting and Complete Artificial Intelligence (ICAI)". Four new algorithms under the new ICAI field titled "Artificial Friendship Algorithm", "Artificial Brotherhood Algorithm", "Artificial Mother and Son Algorithm" and "Artificial Husband and Wife Algorithm" are designed in this work. As mentioned in abstract of this work, it is appreciated to work in this direction and publish your work with titles like "The Interesting and Complete Artificial Intelligence (ICAI) – Version 1.1" and so on.

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