

## EXCELLENCE MONEY HUMAN SWARM OPTIMIZATION (EMHSO): ISVHAAI AI SOCIETY LETTERS

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### Abstract

A new field titled Very Highly Advanced Artificial Intelligence (VHAAI) and a new Society titled International Society for VHAAI (ISVHAAI) have been coined and defined in 2024. ISVHAAI Society improves and applies VHAAI field to address various problems. This is the Letter No. 15 of ISVHAAI Artificial Intelligence Society Letters. In this Letter, a new algorithm titled Excellence Money Human Swarm Optimization (EMHSO) has been designed.

**Keywords:** AI, VHAAI, ISVHAAI, Money, Excellence, Human Swarm Optimization, HSO, EMHSO.

### 1. INTRODUCTION

The related literature is shown in articles [1] to [5]. A unique algorithm titled Excellence Money Human Swarm Optimization (EMHSO) is designed in this article. Section 2 explains EMHSO algorithm followed by Conclusions made in Section 3. References are available at the end.

### II. EXCELLENCE MONEY HUMAN SWARM OPTIMIZATION

Excellence Money Human Swarm Optimization (EMHSO) is explained in this Section. Money\_Array is initialized in line no. 1. Population of Humans is initialized in line no. 2 and Generation count is set to 0. Magnitude\_Movement\_Array is initialized in line no. 3. Excellence\_Probability and Money\_Probability are set to 0.5. Fitness values of Humans are calculated in line no. 6. Excellent\_Human and Best\_Money\_Human are identified in further lines. For each Human loop is started in line no. 9. Lines 11 to 14 shows Excellence movements. Money movements are shown in lines 15 to 18. A Random number R is generated in line no. 10. If R lies between 0 and 0.5 then Human moves towards Excellent\_Human. This is shown in line no. 12. The magnitude of this movement is Magnitude\_Movement\_Array[Human] multiplied by Step value. If R lies between 0.5 and 1 then Human moves towards Best\_Money\_Human. This is shown in line no. 16. The magnitude of this movement is Magnitude\_Movement\_Array[Human] multiplied by Step value. For each Human Loop is ended in line no. 19. Generation count is incremented by 1 in line number 20. This process is continued until termination condition is reached in line no. 21.

Procedure: Excellence Money Human Swarm Optimization (EMHSO)

- 1) Initialize Money\_Array
- 2) Initialize Population of Humans and Generation is set to 0
- 3) Initialize Magnitude\_Movement\_Array
- 4) Excellence\_Probability = 0.5
- 5) Money\_Probability = 0.5
- 6) Calculate the fitness values of Humans
- 7) Excellent\_Human = Human with best fitness value
- 8) Best\_Money\_Human = Human with highest money
- 9) For each Human:

- 10) Generate Random number R
- 11) If  $0 < R < 0.5$  then:
- 12) Direction = Excellent\_Human – Human
- 13) Convert Direction into Unit Vector
- 14) Position = Position + Direction\* Magnitude\_Movement\_Array[Human]\*Step
- 15) Else If  $0.5 < R < 1$  then:
- 16) Direction = Best\_Money\_Human – Human
- 17) Convert Direction into Unit Vector
- 18) Position = Position + Direction\* Magnitude\_Movement\_Array[Human]\*Step
- 19) End For each Human Loop
- 20) Generation = Generation + 1
- 21) Continue this process until termination condition is reached

### III. CONCLUSIONS

Excellence Money Human Swarm Optimization (EMHSO) is the new algorithm designed in this article. Each Human is associated with Money value. The fitness values of fitness function are considered as Excellence values. Hence Human with best fitness value is considered as Excellent Human. There is scope to explore different values for Excellence and Money Probabilities. There is scope for another version of algorithm where Each Human is associated with Excellence value and fitness values can be considered as Money values. This is just the beginning of Excellence Money Human Swarm Optimization (EMHSO) algorithms. One may invent novel and unique algorithms moving in the direction shown in this article.

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