ISSN: 2581-4311
DOI: doi.org/10.30967/IJCRSET/Satish-Gajawada/193

URF PUBLISHERS
connect with research world

International Journal of Current Research in Science, Engineering & Technology

https://urfpublishers.com/journal/ijcrset

Vol: 8 & Iss: 3

Letter to Editor

ISVHAAI AI Society Letters - Letter No. 5

Satish Gajawada*

IIT Roorkee Alumnus, India

Citation: Gajawada S. ISVHAAI AI Society Letters - Letter No. 5. *Int J Cur Res Sci Eng Tech* 2025; 8(3), 363-365. DOI: doi.org/10.30967/IJCRSET/Satish-Gajawada/193

Received: 18 July, 2025; **Accepted:** 22 July, 2025; **Published:** 25 July, 2025

***Corresponding author:** Satish Gajawada, IIT Roorkee Alumnus, India, Email: satish.gajawada.iit@gmail.com

A B S T R A C T

An International Society that uses VHAAI (Very Highly Advanced Artificial Intelligence) for solving problems is ISVHAAI (International Society for Very Highly Advanced Artificial Intelligence). This is the Letter No. 5 of ISVHAAI Artificial Intelligence Society Letters where six Human Swarm Optimization algorithms titled "Love Human Swarm Optimization (LHSO)", "Kindness Human Swarm Optimization (KHSO)", "Excellence Human Swarm Optimization (EHSO)", "Money Human Swarm Optimization (MHSO)", "Happiness Human Swarm Optimization (HHSO)" and "Complete Human Swarm Optimization (CHSO)" are designed in this letter.

Keywords: AI; VHAAI; ISVHAAI; Human swarm optimization; Love; Kindness; Excellence; Money; Happiness; LHSO; KHSO; EHSO; MHSO; HHSO; CHSO; Complete Human Swarm Optimization

Introduction

Articles[1-10] shows Human Inspired optimization algorithms. In this letter, six novel Human Swarm Optimization algorithms have been designed. Section 2 to Section 7 shows Love Human Swarm Optimization, Kindness Human Swarm Optimization, Excellence Human Swarm Optimization, Money Human Swarm Optimization, Happiness Human Swarm Optimization and Complete Human Swarm Optimization respectively. Section 8 shows Conclusions. At the end there are references.

Love Human Swarm Optimization

Initialization is done in line no. 1. Generation count is set to 0. Fitness values of Humans are calculated in line no. 3. Lines 4 to 6 calculate the Probability of all Humans. The higher the fitness the higher is the chance of getting selected. For loop is started in line no. 7 for each Human. Lines 8 and 9 select a target Human T based on random number generated and probabilities of Humans. Human is located at pos and vector (T - pos) gives movement direction of Human in line no. 10. Movement direction is divided by its magnitude to obtain a unit vector of magnitude 1. Love_Array [Human][T] gives the love value between Humans "Human" and "T". Line no. 12 gives position update equation. The Human moves along the Movement_Direction and magnitude of this movement is Love_Array[Human][T] multiplied by Step value. This process is continued for all Humans. Line no. 13 ends for each Human loop. Generation is incremented in line number 14. The loop continues until termination condition is reached as shown in line no. 15.

Procedure: Love Human Swarm Optimization (LHSO)

- Initialize Love_Array and positions of Humans
- Generation = 0
- Calculate fitness values of all Humans
- Fitness_Sum = Sum (fitness values of all Humans)
- Probability = [(fitness value)/(Fitness_Sum)]

- Calculate Probability for all Humans
- For each Human do
- Generate Random number R
- Based on R and Probabilities select a target Human T
- Movement_Direction = (T - pos)
- Movement_Direction = [Movement_Direction / Magnitude (Movement_Direction)]
- pos = pos + Movement_Direction*Love_Array[Human] [T]*Step
- End For each Human loop
- Generation = Generation + 1
- Loop until termination condition is reached

Kindness Human Swarm Optimization

The difference between Love Human Swarm Optimization (LHSO) and Kindness Human Swarm Optimization (KHSO) is that LHSO is based on love value between humans where as KHSO is based on Kindness value of Humans. Line no. 12 gives position update equation. The Human moves along the Movement_Direction and magnitude of this movement are Kindness_Array [Human] multiplied by Step value.

Procedure: Kindness Human Swarm Optimization (KHSO)

- Initialize Kindness_Array and positions of Humans
- Generation = 0
- Calculate fitness values of all Humans
- Fitness_Sum = Sum (fitness values of all Humans)
- Probability = [(fitness value)/(Fitness_Sum)]
- Calculate Probability for all Humans
- For each Human do
- Generate Random number R
- Based on R and Probabilities select a target Human T
- Movement_Direction = (T - pos)
- Movement_Direction = [Movement_Direction / Magnitude (Movement_Direction)]
- pos = pos + Movement_Direction*Kindness_ Array[Human]*Step
- End For each Human loop
- Generation = Generation + 1
- Loop until termination condition is reached

Excellence Human Swarm Optimization

The difference between Love Human Swarm Optimization (LHSO) and Excellence Human Swarm Optimization (EHSO) is that LHSO is based on love value between humans where as EHSO is based on Excellence value of Humans. Line no. 12 gives position update equation. The Human moves along the Movement_Direction and magnitude of this movement are Excellence_Array [Human] multiplied by Step value.

Procedure: Excellence Human Swarm Optimization (EHSO)

- Initialize Excellence_Array and positions of Humans
- Generation = 0
- Calculate fitness values of all Humans
- Fitness_Sum = Sum (fitness values of all Humans)
- Probability = [(fitness value)/(Fitness_Sum)]
- Calculate Probability for all Humans
- For each Human do
- Generate Random number R
- Based on R and Probabilities select a target Human T
- Movement_Direction = (T - pos)
- Movement_Direction = [Movement_Direction / Magnitude (Movement_Direction)]
- pos = pos + Movement_Direction*Excellence_Array [Human]*Step
- End For each Human loop
- Generation = Generation + 1
- Loop until termination condition is reached

Money Human Swarm Optimization

The difference between Love Human Swarm Optimization (LHSO) and Money Human Swarm Optimization (MHSO) is that LHSO is based on love value between humans where as MHSO is based on Money value of Humans. Line no. 12 gives position update equation. The Human moves along the Movement_Direction and magnitude of this movement is Money_Array[Human] multiplied by Step value.

Procedure: Money Human Swarm Optimization (MHSO)

- Initialize Money_Array and positions of Humans
- Generation = 0
- Calculate fitness values of all Humans
- Fitness_Sum = Sum(fitness values of all Humans)
- Probability = [(fitness value)/(Fitness_Sum)]
- Calculate Probability for all Humans
- For each Human do
- Generate Random number R
- Based on R and Probabilities select a target Human T
- Movement_Direction = (T - pos)
- Movement_Direction = [Movement_Direction / Magnitude(Movement_Direction)]
- pos = pos + Movement_Direction*Money_ Array[Human]*Step
- End For each Human loop
- Generation = Generation + 1
- Loop until termination condition is reached

Happiness Human Swarm Optimization

The difference between Love Human Swarm Optimization (LHSO) and Happiness Human Swarm Optimization (HHSO) is that LHSO is based on love value between humans where as HHSO is based on Happiness value of Humans. Line no. 12 gives position update equation. The Human moves along the Movement_Direction and magnitude of this movement are Happiness_Array[Human] multiplied by Step value.

Procedure: Happiness Human Swarm Optimization (HHSO)

- Initialize Happiness_Array and positions of Humans
- Generation = 0
- Calculate fitness values of all Humans

- Fitness_Sum = Sum (fitness values of all Humans)
- Probability = [(fitness value)/(Fitness_Sum)]
- Calculate Probability for all Humans
- For each Human do
- Generate Random number R
- Based on R and Probabilities select a target Human T
- Movement_Direction = (T - pos)
- Movement_Direction = [Movement_Direction / Magnitude (Movement_Direction)]
- pos = pos + Movement_Direction*Happiness_Array[Human]*Step
- End For each Human loop
- Generation = Generation + 1
- Loop until termination condition is reached

Complete Human Swarm Optimization

The Complete Human Swarm Optimization (CHSO) is based on Love, Kindness, Excellence, Money and Happiness values of Humans. Line no. 13 gives position update equation. The Human moves along the Movement_Direction and magnitude of this movement is Complete_Movement_Magnitude multiplied by Step value. Complete_Movement_Magnitude is calculated from Love, Kindness, Excellence, Money and Happiness values of Humans as shown in line no. 12.

Procedure: Complete Human Swarm Optimization (CHSO)

- Initialize all arrays and positions of Humans
- Generation = 0
- Calculate fitness values of all Humans
- Fitness_Sum = Sum (fitness values of all Humans)
- Probability = [(fitness value)/(Fitness_Sum)]
- Calculate Probability for all Humans
- For each Human do
- Generate Random number R
- Based on R and Probabilities select a target Human T
- Movement_Direction = (T - pos)
- Movement_Direction = [Movement_Direction / Magnitude (Movement_Direction)]
- Complete_Movement_Magnitude =0.2*Love_Array[Human][T] + 0.2*Kindness_Array[Human]+ 0.2*Excellence_Array[Human] + 0.2*Money_Array[Human]+ 0.2*Happiness_Array[Human]
- pos = pos + Movement_Direction* Complete_Movement_Magnitude *Step
- End For each Human loop
- Generation = Generation + 1
- Loop until termination condition is reached

Conclusions

Six Human Swarm Optimization algorithms are designed in this letter. The concepts Love, Kindness, Excellence, Money and Happiness are incorporated into Optimization algorithm to design a new and unique algorithm titled “Complete Human Swarm Optimization (CHSO)” algorithm. This is just the beginning of Human Swarm Optimization algorithms. There is scope to explore and design more novel and unique algorithms working in this direction shown in this letter.

References

1. Rai R, Das A, Ray S, et al. Human-Inspired Optimization Algorithms: Theoretical Foundations, Algorithms, Open-Research Issues and Application for Multi-Level Thresholding. Arch Computat Methods Eng 2022;29:5313-5352.
2. Lian J, Hui G. Human Evolutionary Optimization Algorithm. Expert Systems with Applications 2024;241:1226.
3. Dehghani M, Trojovská E, Zuščák T. A new human-inspired metaheuristic algorithm for solving optimization problems based on mimicking sewing training. Sci Rep 2022;12;17387.
4. Zhang LM, Dahlmann C, Zhang Y. Human-Inspired Algorithms for continuous function optimization. 2009 IEEE International Conference on Intelligent Computing and Intelligent Systems 2009:318-321.
5. Trojovská E, Dehghani M. A new human-based metahurestic optimization method based on mimicking cooking training. Sci Rep 2022;12:14861.
6. Hubálovská M, Hubálovský Š, Trojovský P. Botox Optimization Algorithm: A New Human-Based Metaheuristic Algorithm for Solving Optimization Problems. Biomimetics 2024;9(3):137.
7. Amin SU, Dehghani M. Painting Training Based Optimization: A New Human-based Metaheuristic Algorithm for Solving Engineering Optimization Problems. Eng Tech Applied Sci Res 2025;15(2):21774-21782.
8. Hamadneh T, Batiha B, Alsayyed O, et al, Barber Optimization Algorithm: A New Human-Based Approach for Solving Optimization Problems, Computers. Materials, Continua 2025;83(2):2677-2718.
9. Fattahi E, Bidar M, Kanan HR. Focus Group: An Optimization Algorithm Inspired by Human Behavior. Int J Computational Intelligence and Applications 2018;17(01):1850002.
10. El-Kenawy ESM, Rizk FH, Zaki AM, et al. iHow Optimization Algorithm: A Human-Inspired Metaheuristic Approach for Complex Problem Solving and Feature Selection. J Artif Intell Eng Pr 2024;1:36-53.