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Artificial Excellence -A New Branch of Artificial Intelligence

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Abstract

"Artificial Excellence" is a new field which is invented in this article. Artificial Excellence is a new field which belongs to Artificial Human Optimization field. Artificial Human Optimization is a sub-field of Evolutionary Computing. Evolutionary Computing is a sub-field of Computational Intelligence. Computational Intelligence is an area of Artificial Intelligence. Hence after the publication of this article, "Artificial Excellence (AE)" will become popular as a new branch of Artificial Intelligence (AI). A new algorithm titled "Artificial Satish Gajawada and Durga Toshniwal Algorithm (ASGDTA)" is designed in this work. The definition of AE is given in this article followed by many opportunities in the new AE field. The Literature Review of Artificial Excellence field is shown after showing the definition of Artificial Intelligence. The new ASGDTA Algorithm is explained followed by Results and Conclusions.

Index terms— artificial excellence, artificial human optimization, evolutionary computing, computational

1 I. Definition of Artificial Excellence Field

he basic entities in Particle Swarm Optimization, Artificial Soul Optimization and Artificial God Optimization are Artificial Birds, Artificial Souls and Artificial Gods respectively. Similarly, the basic entities in Artificial Human Optimization field algorithms are Artificial Humans. "Artificial Excellence (AE)" is a subfield of Artificial Human Optimization field. Hence the basic entities in AE field are also Artificial Humans only. But there is a difference. Artificial Human Optimization is about imitating Humans in general. There is no concept of imitating particular Human beings. AE is based on imitating particular Human beings. The basic entities in AE field algorithms are particular Human beings. Every Human is different. Hence imitating Humans in general (Artificial Human Optimization) and imitating particular Human beings (Artificial Excellence) will yield different results. If we take particular Human being (Say Ankush Mittal) then we can design algorithm "Artificial Ankush Mittal Algorithm" where the search space consists of Artificial Ankush Mittals and this Ankush Mittal Algorithm belongs to Artificial Excellence (AE) field. Section 5 of this article designs and describes world's first AE field algorithm. This algorithm is named as "Artificial Satish Gajawada and Durga Toshniwal Algorithm (ASGDTA Algorithm)". The basic entities in ASGDTA Algorithm are Artificial Satish Gajawadas and Artificial Durga Toshniwals. Just like Satish Gajawada and Durga Toshniwal move in real world and solves problems. Similarly, Artificial Satish Gajawadas and Artificial Durga Toshniwals move in search space and solves optimization problems.

2 II.

3 Opportunities in the New Artificial Excellence Field

4 Artificial Intelligence

The following is the definition of Artificial Intelligence according to Investopedia shown in double quotes as it is:

"Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions. The term may also be applied to any machine that exhibits traits associated with a human mind such as learning and problem-solving" (Investopedia, 2020).

IV.

5 Literature Review

6 V. The Artificial Satish Gajawada and Durga Toshniwal Algorithm

This section explains Artificial Satish Gajawada and Durga Toshniwal Algorithm (ASGDTA). Figure 1 shows ASGDTA. All Artificial Satish Gajawadas and Artificial Durga Toshniwals are initialized in line number

7 Results

The benchmark functions are taken from article (Gajawada, S., and Hassan Mustafa, 2019a). The ASGDTA and PSO are applied on 5 benchmark functions shown in figure 2 to figure 6.

8 Conclusions

A new field titled "Artificial Excellence (AE)" is invented and defined in this work. Researchers in Artificial Intelligence field can follow the path shown in this paper and create algorithms like "Artificial Narendra Modi Algorithm", "Artificial Abdul Kalam Algorithm", "Artificial Mahatma Gandhi Algorithm", "Artificial Mother Teresa Algorithm" and "Artificial Raju Algorithm" by imitating particular humans like Narendra Modi, Abdul Kalam, Mahatma Gandhi, Mother Teresa and Raju respectively. If there are 100 crores population then we can imitate all these population and create more than 100 crores algorithms. If there are 20 people in a project solving real world problems. Then we can create a AE field algorithm imitating these particular 20 people. If we have particular Humans Raju and Rani in real world and AE field algorithm size is 20 then there will be multiple particular Artificial Humans in search space like 10 Artificial Rajus and 10 Artificial Ranis. Hence from this article it is clear that there are INFINITE articles and INFINITE opportunities possible in the new AE field invented in this work.

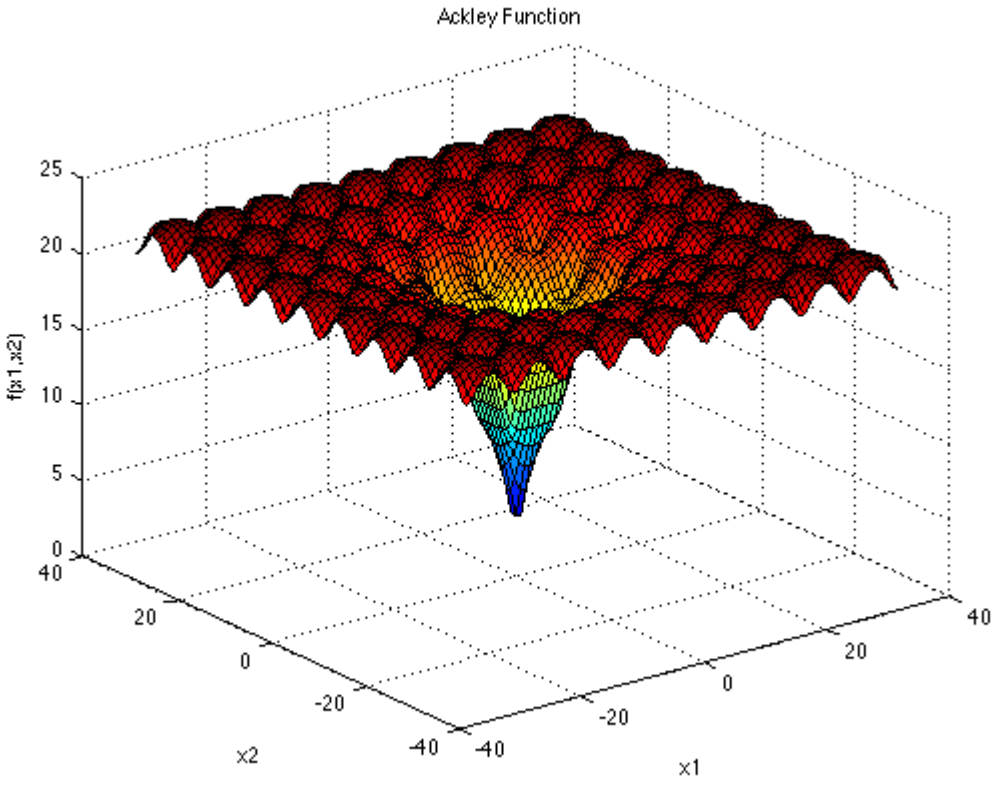

Figure 1:

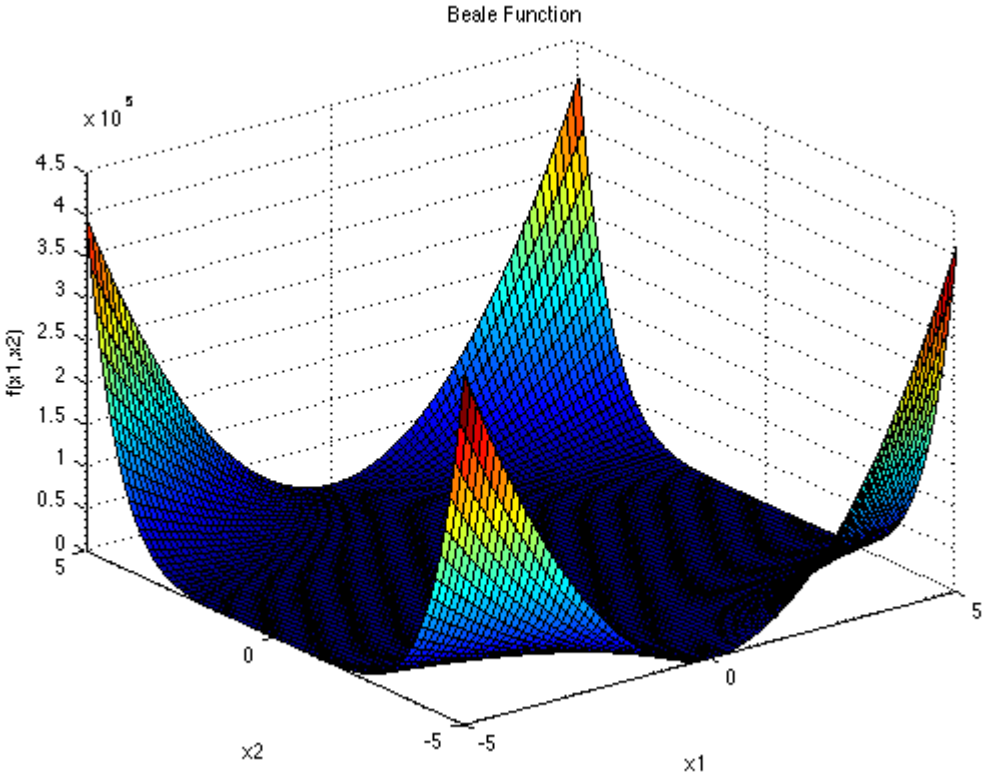

Figure 2:

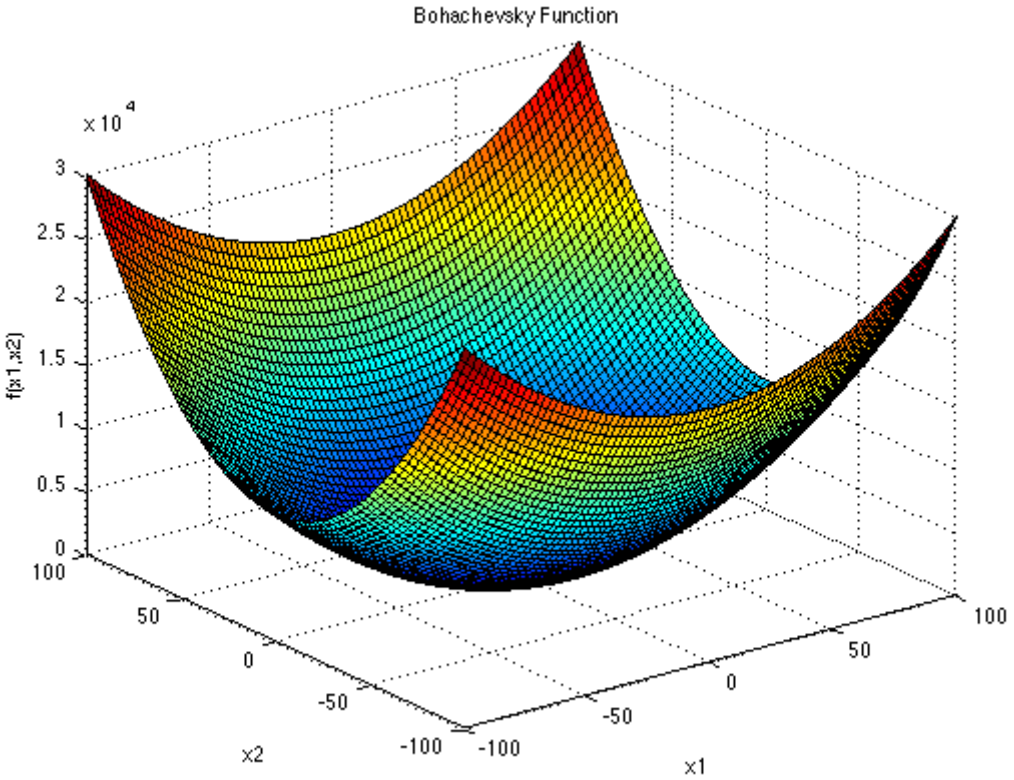

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Figure 3: Figure 1 :

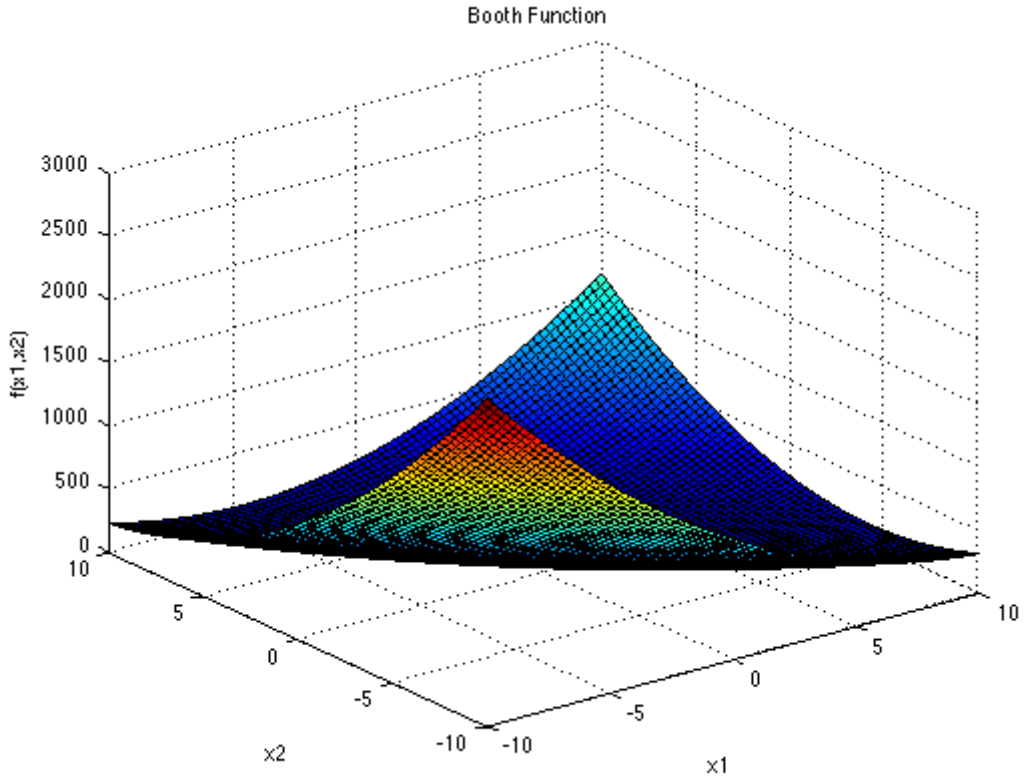

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Figure 4: Figure 2 :

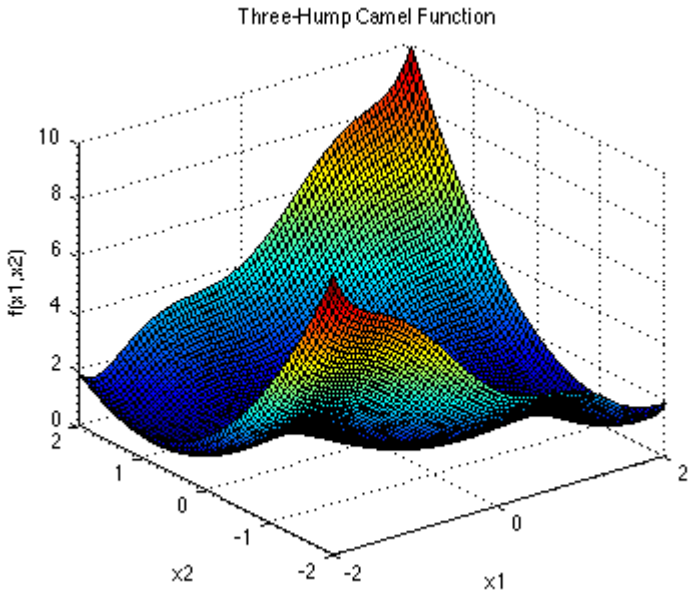

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Figure 5: Figure 3 :

Figure 6:

```
5)          for each particle i do
6)          if ( generate_random_number (0,1) < DurgaToshniwalProbability
            ) then // Durga Toshniwal
7)          Update Velocity of Artificial Durga Toshniwal
8)          Update Position of Artificial Durga Toshniwal
9)          else // Satish Gajawada
10)         if ( random(0,1) < HelpOfDurgaToshniwalProbability) then //
            Satish Gajawada with Help
11)         Update Velocity of Artificial Satish Gajawada
12)         Update Position of Artificial Satish Gajawada
13)         else // Satish Gajawada 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 7:

1

Year 2021
( ) D

Figure 8: Table 1

1

Benchmark Function / Algorithm	Artificial Satish Gajawada and Durga Toshniwal Algorithm (ASGDTA)	PSO Algorithm
Ackley Function		
Beale Function		
Bohachevsky Function		
Booth Function		
Three-Hump Camel Function		

VII.

Figure 9: Table 1 :

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