

Artificial Satisfaction -The Brother of Artificial Intelligence

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Abstract

John McCarthy (September 4, 1927 – October 24, 2011) was an American computer scientist and cognitive scientist. The term "Artificial Intelligence" was coined by him (Wikipedia, 2020). Satish Gajawada (March 12, 1988 – Present) is an Indian Independent Inventor and Scientist. He coined the term "Artificial Satisfaction" in this article (Gajawada, S., and Hassan Mustafa, 2019a). A new field titled "Artificial Satisfaction" is introduced in this article. "Artificial Satisfaction" will be referred to as "The Brother of Artificial Intelligence" after the publication of this article. A new algorithm titled "Artificial Satisfaction Algorithm (ASA)" is designed and implemented in this work. For the sake of simplicity, Particle Swarm Optimization (PSO) Algorithm is modified with Artificial Satisfaction Concepts to create the "Artificial Satisfaction Algorithm (ASA)". PSO and ASA algorithms are applied on five benchmark functions. A comparison is made between the results obtained. The focus of this paper is more on defining and introducing "Artificial Satisfaction Field" to the rest of the world rather than on implementing complex algorithms from scratch.

Index terms— intelligence, artificial intelligence, satisfaction, artificial satisfaction, new invention, new creation, new area of research.
Intelligence, the focus of this work is on the "Artificial Satisfaction" where consideration is given to the "Satisfaction" of all living beings and not just the satisfaction of humans.

1 II.

2 Billions and Trillions of Opportunities in the new Artificial Satisfaction Field

There is an Excellent Future for Artificial Satisfaction (AS) Field Research Scientists. There are billions and trillions of opportunities in the Artificial Satisfaction field. Some of them are shown below:

3 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).

4 IV.

5 Literature Review

There are lakhs of researchers who are working in Artificial Intelligence. But there is no single researcher who worked in Artificial Satisfaction field to date. This work shows the World's First Artificial Satisfaction method.

For the sake of completeness, articles (Al-Awami, A.T.; Zerguine, A.; Cheded, L.; Zidouri, A.; Saif, W., 2011), (Al-Shaikhi, A.A., Khan, A.H., Al-Awami, A.

6 V. The Artificial Satisfaction Algorithm

This section explains Artificial Satisfaction Algorithm (ASA). Figure ?? shows ASA. Line number 1 initializes all the particles. Second line sets iterations to zero. In lines 4 to 11, the local best of each particle and global best of all particles are updated. The random numbers generated and Satisfaction Probability are used to group particles into either "Satisfied Beings" or "Unsatisfied Beings". Satisfied Beings have the potential to move in search space because of their satisfaction. Hence in lines, 14 to 17 position and velocity of Satisfied Particle are updated. On the other hand, Unsatisfied Beings cannot move in the search space themselves because of their dissatisfaction. The random numbers generated and Help of Satisfied People Probability are used to classify Unsatisfied Beings into two groups. Either they will receive support from Satisfied Beings or not. Hence in lines 20 to 23, Unsatisfied Beings update position and velocity because they receive help from Satisfied Beings. As shown in line number 25, Unsatisfied Beings without receiving any help from Satisfied Beings cannot move in search space. Line number 29 increments iterations variable by 1. The execution reaches back to line number 4 if the termination condition is false. The next iteration starts, and execution continues similar to the current iteration. If the termination condition is reached in line number 30, then execution stops, and the optimal value is returned.

7 Results

The benchmark functions are taken from article (Gajawada, S., and Hassan Mustafa, 2019a). The ASA and PSO are applied on 5 benchmark functions shown in figure 2 to figure ???. Table 1 shows the results obtained. Green represents performed well. Red represents not performed well. Blue represents performed between well and not well. From Table 1, we can see that all cells are green in color which means the PSO algorithm and developed ASA performed well on all benchmark functions.

8 Conclusions

A new field titled "Artificial Satisfaction" is defined and introduced in this article. The World's First algorithm under the Artificial Satisfaction field is designed and developed in this article. Results show that proposed ASA and PSO algorithms performed well on all benchmark functions. There is a difference between three recently introduced new research fields titled "Artificial Human Optimization (AHO)" (Gajawada, S., 2016), "Artificial Soul Optimization (ASO)" (Gajawada, S., & Hassan Mustafa., 2019b), "Artificial God Optimization (AGO)" (Gajawada, S., & Hassan Mustafa, 2020) and "Artificial Satisfaction". AHO, ASO, and AGO are three new fields under Artificial Intelligence. But the "Artificial Satisfaction" field is a separate field like "Artificial Intelligence" and not a subfield of Artificial Intelligence. There are billions and trillions of opportunities under the Artificial Satisfaction field. The FUTURE will be very bright for Artificial Satisfaction Field Research Scientists and Students.

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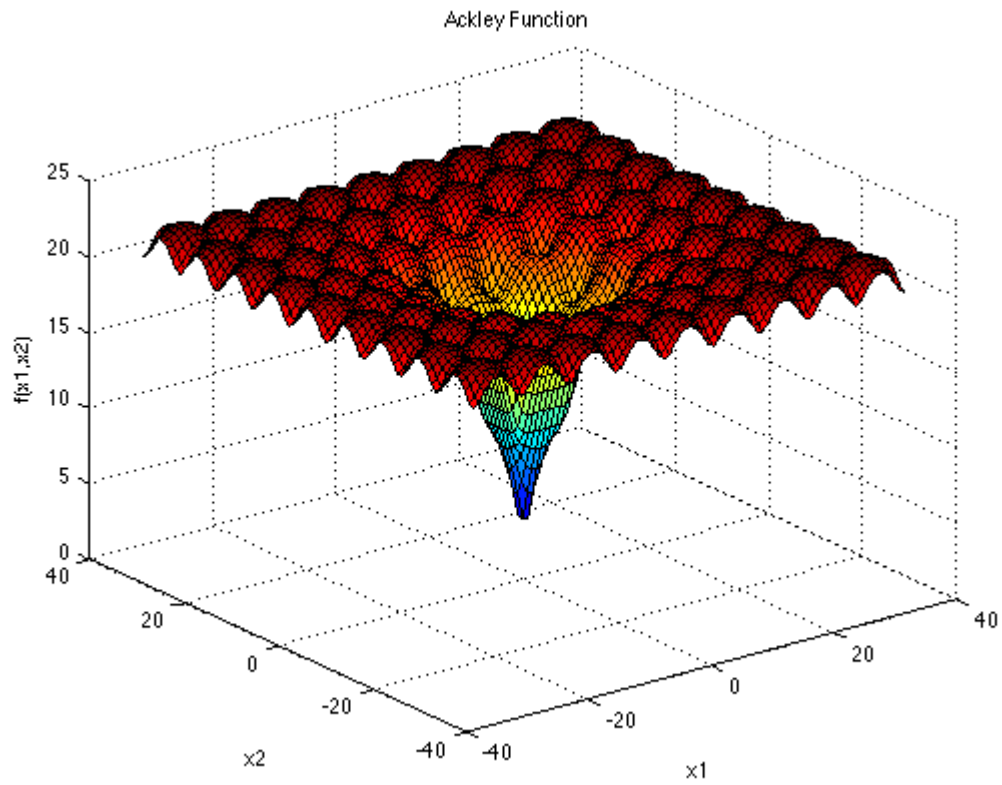
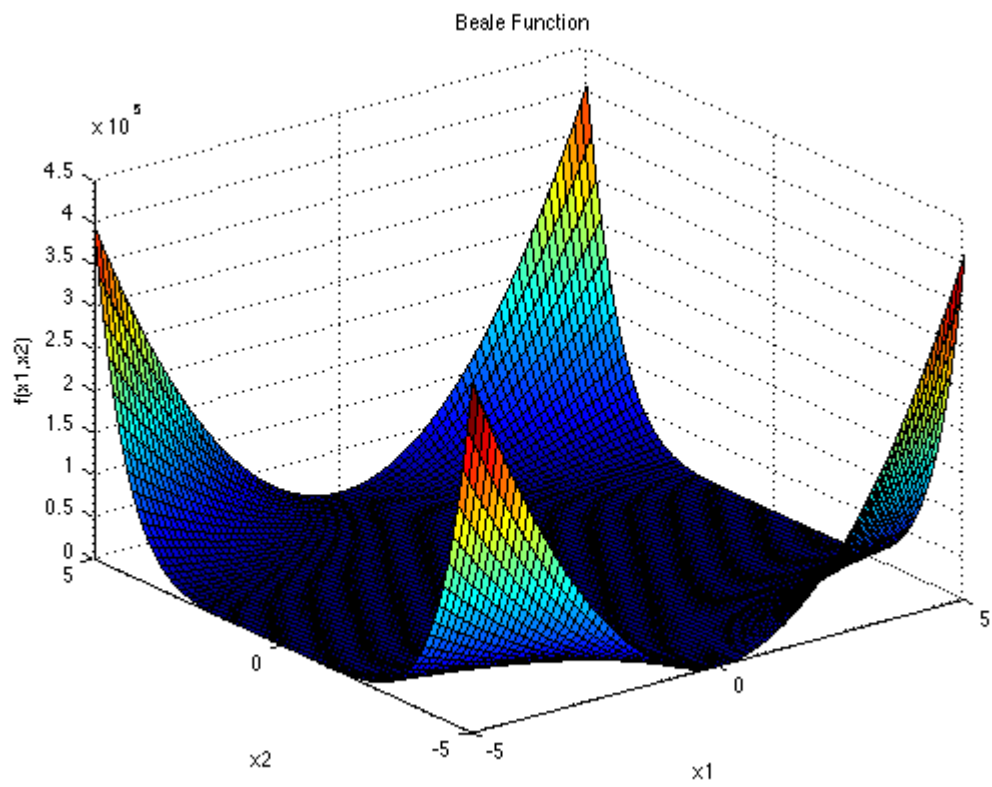
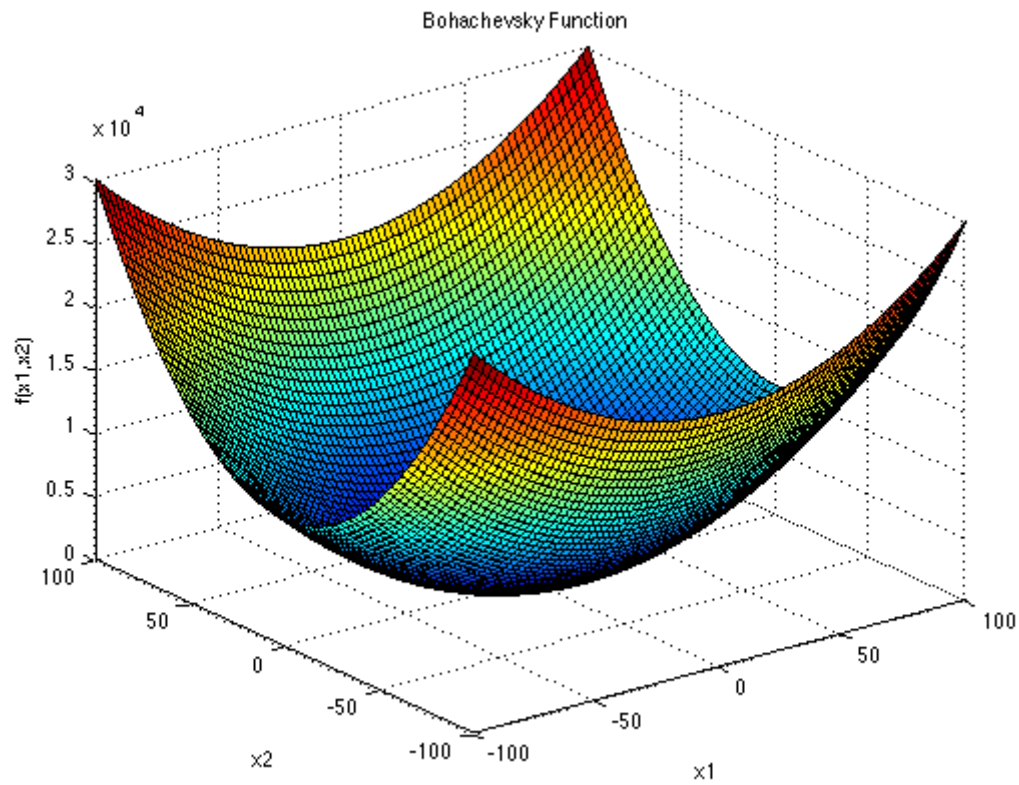


Figure 1:



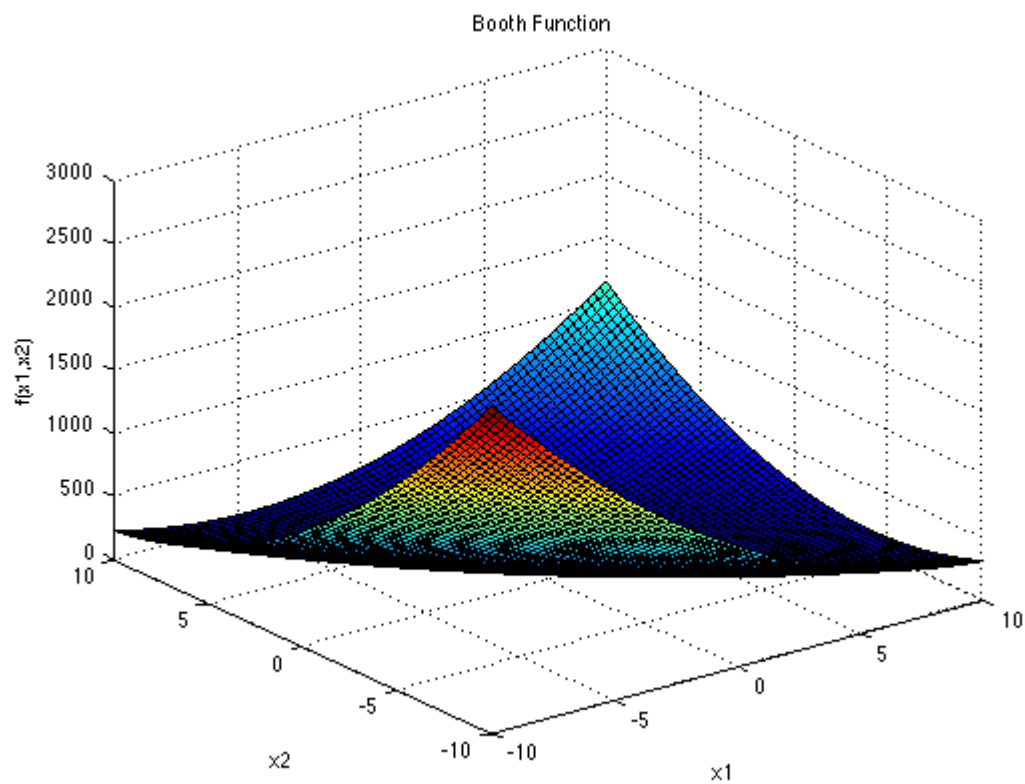
112

Figure 2: Figure 1 : 12)



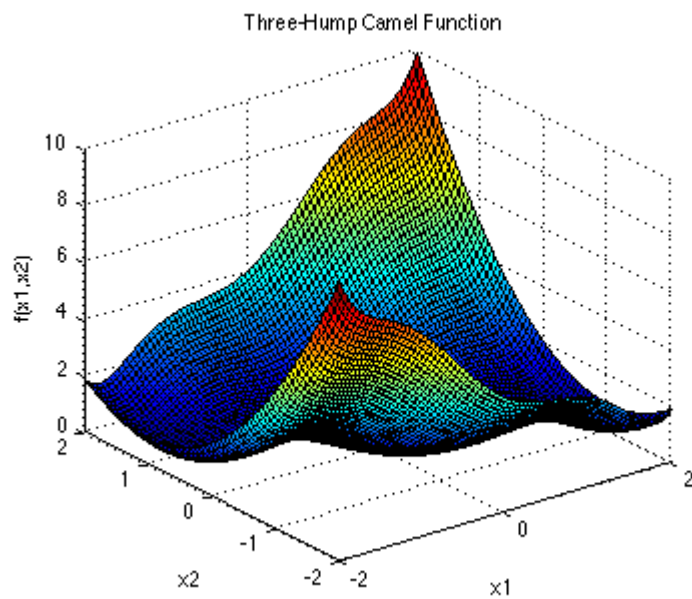
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Figure 3: Figure 2 :



34

Figure 4: Figure 3 :Figure 4 :



56

Figure 5: Figure 5 :Figure 6 :

1

Benchmark Function / Algorithm	Artificial Satisfaction	PSO Algo- rithm
Ackley Function	Algorithm (ASA)	
Beale Function		
Bohachevsky Function		
Booth Function		
Three-Hump Camel Function		
VII.		

Figure 6: Table 1 :

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Optimization” on ”Google Search Engine” and it displays content related to him. i. He is the member of ARIA conference which will be held at Switzerland in 2020.

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