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Metacog Assignment

Written for the computer science discipline, I argued that evolutionary computation is a form of machine learning.

I knew I wanted to write about evolutionary computation, so I needed to find a question that would have two sides to it. I realized that evolutionary computation is a very sophisticated form of computing, but no one was asking if it could be classified as a form of machine learning. As a result, I decided to fill that gap with my paper. In my paper, I made sure to include the opposing viewpoint to my argument, so it did not seem one-sided. I also wanted to stay focused with my topic. In a sense, my paper was concerned with categorization. Ethics always seemed like the next step when thinking about machine learning, but I never wanted to breach it, because it was not what I was most concerned with. I did not want to cover both the categorization and the moral questions, because I felt my paper would then become too broad.

One important part of the paper, was defining what "machine learning" actually meant. In order to decide if evolutionary computation falls into that category, it needed to be clearly stated. I researched different professional definitions that existed, such as Universities and distinguished computer science literature. Once finding a lot of material, I tried to find the intersection of the varying denotations. With that resultant definition in mind, I then used it as my springboard for categorizing machine learning. Another important theme that existed throughout my paper was the depth of the explanations. In my head, I kept thinking that I was presenting

this to a computer science audience. However that was not necessarily the case, and I realized

I needed to make sure my clarifications were easy to follow. I tried to use language that clearly

highlighted some important aspects of the process, such as "This is the key to evolutionary

computation: the computer's ranking and selection is what guides the population towards its end

goal, and is effectively the reason this form of computation is able to deliver the desired

results" (Powell, 3). I tried my best to explain this complex and intricate topic in a way that a

non-savvy computer user would be able to understand.

I noticed that machine learning and evolutionary computation seemed to be separate

topics in the computer science field. Evolutionary computation was simply a method a

programmer could implement when trying to reach some sort of design goal. Machine learning,

on the other hand, existed as more of an abstract idea. I wanted to see how these two topics

were related, or more specifically, if it was appropriate to classify one as a subset of the other.

With this bridge now constructed, new questions could be proposed. Is evolutionary

computation ethical? Is it wise to use mother nature as a basis for computational methods? And

are there other systems in biology that could benefit mankind, if we were to model them

computationally?