



Colorado Science and Engineering Fair

2024 Individual Project Abstract Form

Please print 2 copies of the completed form. Sign both copies, keep 1 for your notebook and submit 1 copy to your Regional Fair Director with your other paperwork.

Title of Project: Use of Artificial Intelligence For Cancer Diagnosis

Finalist's Name: Pablo

School and City: Yuma High School, Yuma CO

Sponsor's Name: Amy Melby

Category: Mathematics & Computer Sciences (MACS)

Division: Senior (9th - 12th grades)

Abstract (250 words or less):

Artificial Intelligence (AI) has become integrated into everyday life for most people. From browsing the web to shopping, many companies have begun to use AI to further the customer experience. AI has begun to be used in medicine as a tool to develop new types of medication in clinical trials, reduce the possibility of human error, and organize considerable amounts of data. Using the knowledge of possible applications of AI, it was hypothesized that an algorithm could be developed that allows skin cancer to be identified as malignant or benign. The purpose of the project was to expedite the process of identification of cancers and determine if urgent medical attention is needed.

Using coding software and coding libraries, a trainable machine learning algorithm was utilized and modified. The algorithm was trained using online test data, which produced accurate results. That data was trained 5 different times and evaluated by the model 1000 times per cycle. An average accuracy of 97.46 % was calculated throughout the testing process with a standard deviation of 0.483. A final test was performed to determine if the model was performing to expectation. This final test produced an accuracy score of 96.93% and a standard deviation of 0.0414.

I hereby certify that the above statements are correct and the information provided in the Abstract is the result of one year's research. I also attest that the above properly reflects my own work.

Finalist's Signature:

Date:

03/01/2024

In addition, all students must complete the ISEF Student Checklist (1A), Research Plan, Approval Form (1B), and Checklist for Adult Sponsor (1), and any other ISEF forms required for this type of project. See the International Rules and Guidelines for form requirements. Return COPIES of all of these forms to your Regional Fair Director with you Finalist Verification/Permission Form. A signed copy of this form must be included in your notebook.