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Chihuahua or Muffin

ITAI 1378

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Lab 06 Chihuahua or Muffin

The "Chihuahua or Muffin" workshop is a fun way to introduce beginners to machine learning, especially image classification. In this task, you have to decide whether a picture shows a Chihuahua or a muffin, which can be trickier than it sounds. It helps people understand how machine learning works when it comes to recognizing images.

At first, I chose Option A, which involved using AWS SageMaker Studio Lab. However, I felt pressured by the time limit and wasn’t sure how long I would take on the project. Because of that, I decided to switch to Option B, which used Google Colab instead. The next issue I faced was running into coding errors. At first, I asked for help from AI tools like Speak to AI – Patricia, ChatGPT, and Gemini. Each of them explained the errors a little differently, but by combining all their advice, I was able to understand the problem better. I also learned that how you ask the AI for help matters. You need to be specific in your questions to get helpful answers.

Later, I found a useful feature in Colab. When a code error popped up, there was a button called "ExplainError" under the cell where the error occurred. When I clicked on it, a side-by-side window opened with Gemini offering help. Gemini even suggested ways to fix the error, which was very helpful for me.

Another challenge I faced was mounting my Google Drive. I had to search for the right code to connect it, but with AI’s help, it turned out to be easier than I thought.

Running each code cell was simple when there were no errors. The real challenge was fixing the errors when they happened, but AI helped a lot in solving those problems. I also didn’t know what height and width to use for my images. With AI’s assistance, I chose a height and width of 224 pixels each, which worked well.

Loading the data and training the model on the data wasn’t too difficult since the necessary code was already provided in the cells. However, I still struggled with improving the model's accuracy to 100%. The night before, I ran the model and got an accuracy of around 85%. Today, it was slightly higher, but I still don’t know how to change the code to get 100% accuracy. It’s something I’m still learning. This lab shows that sometimes initial models might not perform well without any adjustments. I learned that machine learning is an iterative process, where parameters, model architectures, and techniques such as data augmentation can be adjusted to improve accuracy.

I’ve realized how important image classification is in many industries. Accurately identifying objects can help humans in a variety of ways, like diagnosing medical conditions or recognizing items.

Overall, the "Chihuahua or Muffin" activity teaches beginners about the challenges of image classification. It also shows how important it is to have good data and a carefully designed machine-learning model to make accurate predictions.