

## Reflective Journal: L02

Today I spent exploring the lab examining the possibilities of Azure AI Vision Studio. It was an enlightening and challenging experience, providing a rich understanding of the world of image analysis through AI.

After signing into the Windows environment as a student using a student account and to the Azure subscription as provided in the credentials, I began by setting up all the Azure resources into the "ResourceGroup1" resource group. This initial action was straightforward but set the foundation for the rest of the more complex operations.

Creating an Azure AI Services Resource Creating an Azure AI services resource was the initial significant action. This involved navigating to the Azure portal and creating a new resource with personalized settings. While the process was outlined, I had to make sure I utilized the correct options, such as the region and price tier, and this required care for details. This was a critical step because it laid the foundation for adding the Azure AI service resource to Vision Studio. Subscribing to Vision Studio Next, I subscribed to the Azure AI service resource to Vision Studio. This process was fairly simple but had to be carried out carefully through the Vision Studio platform. I ensured that the correct resource was utilized and set it as the default resource. This part of the lab emphasized the importance of resource understanding and managing resources in the Azure portal.

Captions Generation on an Image. Having installed everything, I then conducted the principal work of the laboratory.

The first task was to generate captions for an image in Vision Studio. I inputted a picture of a parent with a child as he photographed it in a shopping store with the camera phone. The Captioning feature generated a single readable string that conveyed what the image represented. This task put in the spotlight the ability of AI to read and comprehend visual content. I was surprised at the accuracy and relevance of the generated captions.

Performing Dense Captioning Based on the previous activity, I learned about Dense Captioning, which provides a number of human-readable captions for an image. It was a more mature feature in the sense that it had bounding boxes around recognized objects within the image. It was wonderful to see how the AI located and labeled different elements in the image, with a detailed description of the scene. This activity showed the capability of AI to carry out thorough image analysis and object detection. Tagging Images The second option I attempted was Extract Tags, which identifies and tags various objects, animals, scenery, and activities within an image.

I uploaded an image of a customer with a shopping basket at a supermarket.

The extracted tags were not only objects but also activities such as shopping, selling, and standing. This task demonstrated the strength of the AI in recognizing and categorizing

different features in an image, providing meaningful metadata for future analysis. Object Detection The final task was playing with the Object Detection feature, which recognizes and retrieves bounding boxes for recognized objects and living beings. I included an image of a shopper and a shopping cart. By changing the value of the threshold, I was able to visualize how the scores of confidences influence the detection results.

This training exercise proved AI's accuracy and flexibility in recognizing objects in a picture, crucial for applications such as surveillance and automated assistance. Insights and Challenges Throughout the lab, I experienced several challenges, primarily adjusting to the Azure portal and Vision Studio interfaces. Ensuring the correct resources were utilized and properly configured was of the utmost concern and required diligence. However, these challenges were also learning opportunities, reinforcing the importance of precision and persistence in handling complex systems. The most useful thing I learned was the immense ability of AI when it comes to image processing. Caption generation, dense captioning, tag extraction, and object detection all show the versatility and potential of AI in understanding visual information. I have a better appreciation now of what Azure AI Vision can accomplish and how it can apply to various industries. Conclusion In summary, this lab exercise was rewarding and challenging. It was a useful introduction to Azure AI Vision Studio and image analysis capabilities. The hands-on exercises helped me learn how AI works in analyzing visual information, and I look forward to accessing more advanced features in the future.