Logicblocks by Techligence Robotics Task Sheet
COCOSSD

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Important:All the underlined text are links, which might not be visible based on your application, so do not forget to click any underlined text throughout the document and make sure to follow the coding standards given in the file.

1 Objective

The goal of this task is to integrate TensorFlow.js models, with a focus on COCO-SSD (Common Objects in Context - Single Shot Detector) , into the Blocks programming environment. This will enable users to utilize advanced machine learning capabilities, specifically object detection, within a visual programming context.

2 Task Description

2.1 Model Integration

1. Research and familiarize yourself with the TensorFlow.js library, with a specific focus on the COCO-SSD model. Gain a thorough understanding of its inputs, outputs, and operational requirements to ensure seamless integration.

2. Design and implement a new set of blocks within the Blocks environment that interface directly with the TensorFlow.js COCO-SSD model. These blocks should enable users to perform object detection on images or video streams, encapsulating the complexity of machine learning models within user-friendly block interfaces.

3. Upon successful object detection, devise an intuitive UI element to display the results. It is recommended to overlay the detection results on the top left corner of the canvas, providing a clear and non-intrusive view.

Additionally, incorporate a feature within the block interface that allows users to toggle the visibility of the detection results, offering flexibility in how information is presented on the canvas.

4. Some important links : TensorflowJS models COCOSSD usage

2.2 User Interface Development

1. Develop user-friendly block interfaces that abstract the complexities of the COCO-SSD model, making it accessible to users with limited programming or machine learning background.

2.3 Documentation

1. Document the usage of the new blocks, providing examples and best practices to guide users in leveraging object detection within their projects.

3 Conclusion

This task represents a significant step towards bridging the gap between complex machine learning models and visual programming environments. By making TensorFlow.js models accessible within Blocks, we empower users to explore and innovate with AI technologies in an intuitive and engaging manner.