QUT Capstone Project Deliverable Agreement Summary

IFB399 Semester 2, 2023

Team Synergetics

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Company

S23M Pty Ltd

Proposed Project

Importing graph-based models from image files into a web-based graphical editor which supports the S23M MODA+MODE methodology

Client

Keith Duddy, Senior Advisor

keith.duddy@s23m.com

Project Context and Goals

The main objective of this project is to implement image recognition software to detect models produced by our client and translate the results to the existing editor application. This will require investigating candidate image recognition software to detect and recognise basic shapes such as boxes, lines, arrowheads, and textual labels.

A research report will be delivered to the client which will include three distinct phases covering the initial image recognition development using OpenCV in JavaScript, the development phase using OpenCV in Python, and the shift to the current development in TensorFlow using Python. All trained image recognition source files along with the build, run, and installation guides will be passed onto our client to support further development of image recognition into the graph-based model editor. A refactored interface and several bug fixes will be delivered to the client.

Must deliver features for the project:

- Prototype image recognition artefacts compiled throughout the course of the project. This will include initial object detection using OpenCV + JavaScript and image recognition using OpenCV + Python.
- Research report covering three phases of development.
- Build/run/installation guide.
- Final image recognition source files.
- Refactored side menu interface.
- Add a save button to the “Edge Properties” pane to prevent the user from selecting another edge until it is ‘clicked’.

Bug Fixes:

- Ensure the client is able to place an arrowhead on the correct end of a vertex.
- Display text option in vertex names without the editor crashing.
- Ensure all vertices, edges, cardinalities, arrows and arrowheads, labels for vertices, vertex descriptions, and vertex titles are able to be placed on the canvas.
- Ensure vertex names are displayed in the tree view of the editor.
- Ensure the tree view is displayed when the user selects the draw tool icon.

Extended goals:

- Extrapolate coordinates of detected shapes into a coherent data structure.

Stretch goals:

- Integrate image recognition into the existing codebase.
- Generate all extracted data structures to form a coherent graph.
- Adjust the auto layout option to allow the user to space the arrow dependencies from each other on the canvas without the editor crashing.

Team Synergetics will deliver the final product on/no later than 16/10/2023 via a PDF directory sent to the client and all code base and research documents, build/run/install guides in the GitHub repo.

How: PDF directory with code base, build/run/install guide in GitHub repo.

When: 16th October 2023. The last date of the release plan, Week 12.

Company: S23M Pty Ltd
Client: Keith Duddy, Senior Advisor
Team: Synergetics

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