Viz AI - Case Study

LABELATA   **iz.ai**

How to develop FDA-approved Artificial Intelligence and Machine Learning (AI/ML) radiology applications

Background & Problem Statement

Viz.ai uses artificial intelligence to enhance care coordination and reduce systemic delays that stand between patients and life-saving treatments. Viz.ai's technology auto-detects and triages a range of potentially life-threatening conditions on acute/emergency CT scans. Their inital focus had been on neuro-radiology applications including the early detection of ischaemic strokes, intracranial haemorrhage and aneurysm detection.

Labelata worked with Viz.ai to help develop their first cardiovascular AI application - Viz Pulmonary Embolism. Thus far Viz's in-house labelling workflows, tools and expertise had been focussed on neuro-radiology applications which prompted them to explore out-sourcing for this new project.

Analysis and Solution

Accurate segmentation of the cardiovascular system including the atrium, ventricles and pulmonary vasculture was a crucial building block in the development of Viz's PE application. Viz.ai partnered with Labelata to harness our expertise in image segmentation for large datasets. Labelata was able to assemble a large team, including board certified radiologists and imaging technologists to create accurate high quality cardiovascular segmentations on CT. These segmentations allowed Viz.ai to build the foundations of their models which were eventually able to automatically segment the cardiac chambers.

Results

The teams at Viz.ai and Labelata worked well together in an agile manner. The developers at Viz.ai could experiment with different labels and see which sub-structures to focus on, what type of cases required more training data and where more precision in the segmentations was required. **Labelata was able to complete the segmentations faster than Viz.ai's in-house team without sacrificing quality or increasing expenditure.**

Viz.ai was able to launch the Left Ventricle/Right Ventricle ratio algorithm as part of the Viz Vascular suite (FDA approved). Labelata's cardiac segmentations helped Viz.ai develop this application which is capable of automatically detecting ventricular size; this feature is crucial in risk stratifying patients with acute pulmonary embolism.

Conclusion

This case study highlights the value of outsourcing complex segmentation tasks to our team of experts who can compliment existing in-house teams. This can be especially effective when prototyping and developing new products.

"Viz derived great value from Labelata's work. It allowed us to jumpstart a project much faster than we would have otherwise and probably shaved 1-2 months off our delivery timeline which is significant. Not only was the speed and quality of the segmentations impressive, we particularly liked the ease of communication with the Labelata team."

David Golan,
Co-Founder, Viz.ai