Kyffin Williams: Digital Image Analysis

Report Name	Outline Project Specification
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1   Project description

Sir John "Kyffin" Williams was a Welsh Landscape Painter, widely regarded as the defining artist of Wales during the 20th Century [1, p.957-958]. His work, and associated metadata collected by the National Library of Wales, allows for some interesting analysis; particularly that of temporal or geological data for a given painting.

Temporal analysis will be the focus of this project as it allows for a diverse range of techniques; from statistical analysis of RGB values of the paintings to looking at the length and style of paintbrush strokes. The ultimate aim of this being to accurately place the year of a given painting which has no metadata collected.

2   Work to be tackled

2.1   Library and Language Decisions

The Open Source Computer Vision (OpenCV) library contains a lot of useful methods for image processing and therefore makes it an important library to research and, probably, include as part of this project. It has C, C++, Python and Java interfaces so some work will also need to be done researching the use of it with each of these languages to decide which would be the best to use with this project.

Currently I have a very good working knowledge of Java and a basic knowledge of C, C++ and Python. However other maths- or science-based libraries; such as NumPy, GNU Scientific Library (GSL) or JAMA; may also affect the decision made.

2.2   Research into Image Processing

Having done very little image processing or computer vision I will need to research the topic in a good level of detail to be able to actually complete this project. Some of the simpler areas such as RGB Statistical Analysis don't require this research to be complete so can be in progress at the same time as this.

3   Project deliverables

4   Initial bibliography

[1] John Davies, Nigel Jenkins, Baines Menna, and Peredur I. Lynch. *The Welsh Academy Encyclopaedia of Wales*. Cardiff: University of Wales Press, 2008.