Senior Project Report
On

“Sugar Cane Grading”

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Part 1: Abstract

The project is initiated to help Mitr Phol Group improve cane quality control over a large area. In order to produce high quality sugar, the company needs detailed information on the cane' conditions in each field. However, those features could vary from one field to another and hard to obtain, as for different external and internal characteristics such as soil characteristic, weather condition and seed quality. Furthermore, since Mitr Phol owns sugar mills in over 10 provinces, there are too many fields for them to do exhaustive surveys. Therefore, there is a room for improvement as we can help them develop a system to estimate the cane health over a larger area.

The goal of this project is to develop a software test bed (but not a final system) for experimenting sugar cane images with various supervised machine learning techniques. The software will first extract the sugar cane crucial characteristics from mobile phone photos using image analysis. This software will then classify the cane into different health categories based on extracted features using supervised machine learning. To maximise the model's reliability, the output classes from different models will compete for returning the most optimal solution, and the models will always be updated as the number of instances grow.

This is a research - real world stakeholder project.