CWRU Data Analytics Boot Camp
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Final Project Proposal
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PizzEye

Background

Artificial Intelligence and Machine Learning are paving the way for the next wave of innovation in the manufacturing sector and could hold the key to transforming factories and workforces of the near future. “AI will perform manufacturing, quality control, shorten design time, and reduce materials waste, improve production reuse, perform predictive maintenance, and more,” according to Andrew Ng, creator of the deep-learning Google Brain project and an adjunct professor of computer science at Stanford University. Some of the leading applications of Machine Learning in manufacturing involves Image or Pattern Recognition. For example, AI trained software can be used to inspect parts in an assembly line and detect faults quicker and more accurately than the human eye.

Proposed Project

Using concepts of Python programming and Machine Learning, we propose a tool that uses image processing and image recognition to identify the type of pizza from a picture. The idea lays foundation to a project with a much larger scope for one of the group members who work in the F&B sector, with a goal to use an AI image recognition module connected to a camera system for quality control in a frozen pizza production line. The finished tool will be able to take a picture of the pizza when finished, compare it to a databank of pizza images and score the accuracy and spread of toppings. By grading the pizza based on pizza type, toppings and their spread, the tool will be able to decide whether or not to discard the pizza.

Proposed Tools:

a) Python
b) Scikit Image
c) Numpy
d) Pillow
e) AWS

Data Source:

a) Eighty stock and user submitted photos of pizzas from the Consumer Engagement Services team at Nestle.
b) Open source pictures of pizza from Google images

Project Github Link:

https://github.com/kafui001/PizzaEye

Link toProject Management Tool:

https://trello.com/b/jgATK7B6/final-project-pizzaeye