Microbiology and Machine Learning: Fungal Enumeration and Classification using ML Algorithms

Steven Clemens, Michael Stanley , Dr. Emmanuel Salifu , Dr. Andreas Spanias

Project Description

- Design a lesson to connect two or more STEM disciplines with an introduction to machine learning that can be emulated in the high school classroom

- Use materials that are free/low cost or already available to most teachers within the stem disciplines.
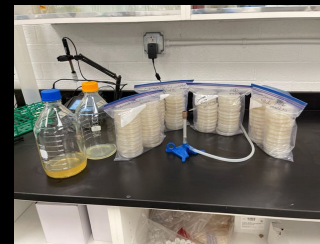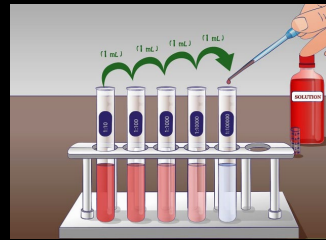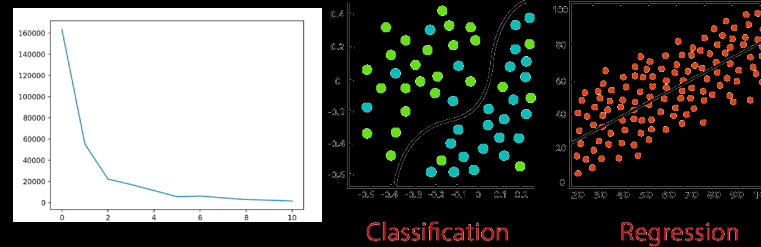
How many Colonies can you see?
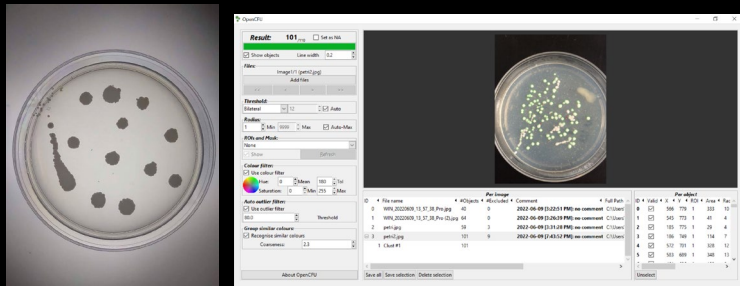
Project Details

Microbiology: advisor Dr. Emmanuel Salifu
- Inoculation of 90 petri dishes with 3 different yeasts and 3 different serial dilutions.

Machine Learning: advisor Mike Stanley

Classification   Regression

Classroom Application

- Teachers have two choices of implementing the lesson, with and without the microbiology portion

- Lesson can be completed in one class setting or can be divided over several class periods. Multiple classrooms can be involved with the lesson emulating the work of a research center

- Little to no cost to teacher

- Students will gain an understanding of what machine learning is ny using several ML tools and how ML can help to solve problem.