A generational shift in student accessibility to bioenergy information and understanding of the potential of machine learning to unlock biological complexities

Increasing the number of high school students who can think critically about how to deal with tomorrow's problems today
RESEARCH OBJECTIVES

Engage future scientists, engineers, and entrepreneurs about the bioenergy industry while introducing students to the potential of machine learning in solving the world’s energy problems

1. Increase the accessibility and effectiveness of algae cultivation in lab and classroom settings
2. Create original video content to engage students in the fields of bioenergy and machine learning
3. Develop an integrated web application to host software tools and educational materials
GOAL 1: ALGAE CULTIVATION

Appendix B
Classroom Guide

Materials List:
1. Microscope (x1)
2. Microscope Slides (x1)
3. Algae Culture (x1)
4. Concentration Medium (x1), media (1 liter)
5. Photobioreactor (x1), seaweed-based
6. Petri dish (x1), agar-based
7. Pipette (x1), medium (x1)
8. Pipette (x1), medium (x1)

1. Prepare photobioreactors:
   - As shown in Figure A, place the glass tubes (x1) and culture medium (x1) in a cover or sealable pack.
   - Aseptically prepare the medium using aseptic technique.

2. Set up the photobioreactor:
   - Place the tubes in a photobioreactor (x1) and seal.
   - Sterilize the photobioreactor (x1) using autoclave.
GOAL 2: EDUCATIONAL VIDEOS

Algaeorithm Tutorial

Algae for Manufacturing

What Is Machine Learning?

2022 Explainer

2021 Explainer

YouTube Channel
GOAL 3: APPLICATION DEVELOPMENT
QUESTIONS?