NDSU | COMPUTER SCIENCE

Capstone 2022

NDSU Big Data Pipeline UI

Team Members: Andrew Hershberger, Joshua Pompa, Noah Schottler, Ryan Doering

Sponsor: NDSU Plant Sciences Big Data Team

BIG DATA PIPELINE TEAM | NDSU

Mission Statement

The tolerance of different plant species to environmental stresses can be effectively analyzed using large-scale data analysis. Our primary objective is to allow plant breeders a method of interfacing with machine learning models to enhance the efficiency of their research.

What are we building

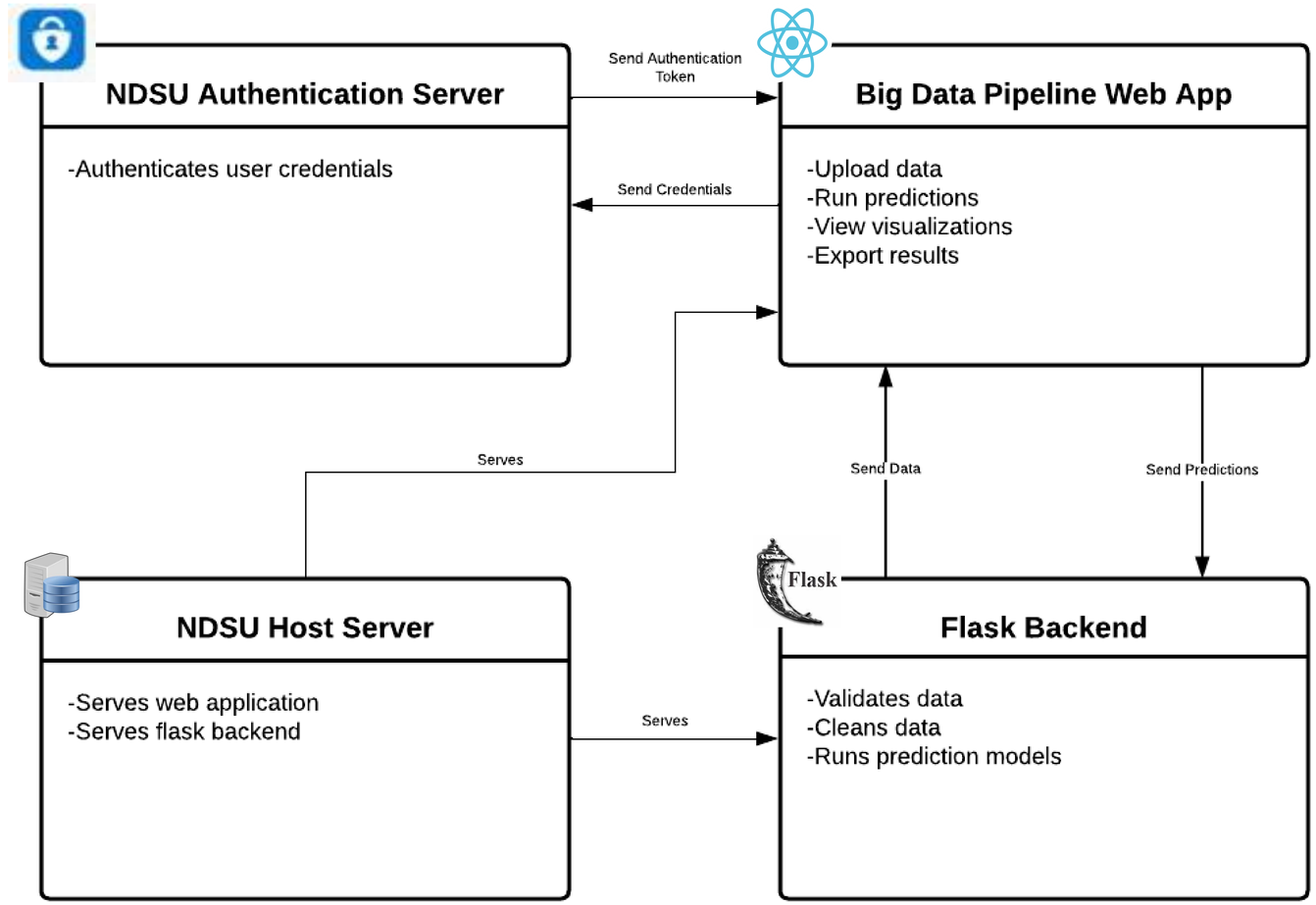
A web application that provides plant breeders a modernized process and support.

Why are we building it

The existing machine learning models developed to aid researchers do not have a user-friendly method of interaction.

How are we building it

Framework: React
Language: JavaScript
Backend: Flask
Repository: GitHub



Application Flow Diagram

Users access the web app from their local device.

Users login with their NDSU credentials. Non-NDSU members can also login with an affiliate account.

Users upload data in the form of a CSV (spreadsheet) from their device. They will also specify crop type and an optional file name.

Users run a prediction on their uploaded data. The results of the prediction contain a decision label (keep/discard) as well as visual data with additional context about the model's results.