Capital One - Machine Learning

Overview
Capital One is exploring the use cases of machine learning algorithms in their banking infrastructure to create accurate models to predict behaviour which will help Capital One become more efficient, accurate and secure. The project helps explore the ways in which Capital One can implement machine learning by providing two proofs of concept – PSU logo recognition and credit card approval – for machine learning models.

Objectives
Create a full-stack web application that will have the necessary user interface (UI) for easy access to the trained, machine-learning models. The UI uses the React framework with a Java backend. The UI will provide the following options to the user

- Upload an image to run classification about whether it is a PSU logo or not
- See a history of uploaded images by the user and the results of their classifications
- Fill out a credit card application which returns the probability of the application being accepted.

An additional specification for the application is a user login system that presents the appropriate history to the user, independent of device.

Approach
- Met with the sponsors to discuss project requirements
- Decide frameworks and architecture for the stack and ML model
- Study current implementations of Machine Learning for images
- Break apart project into tasks for small teams of two
- Put together individual modules
- Repeat process for second phase of the project
- Testing, bug fixes, and security features addition

Outcomes
- The sponsor has a proof of concept as well as a project that can be easily deployed in the industry with minor modifications
- The project helped establish the ML architecture required to setup a project similar to this