Problem Statement and Goals
Optical Alphabet Recognition

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Table 1: Revision History

Date	Developer(s)	Change
January 19, 2024	Hunter Ceranic	Creation of Document
February 19, 2024	Hunter Ceranic	Revision after feedback from Dr. Smith

1 Problem Statement

Optical character recognition is a well known computer vision problem that uses image classification methods and algorithms to convert image data into understandable text. Optical character recognition is widely used in many different fields such as finance, healthcare and supply chain management to help identify important communications and written data in images. As such many tools and programming libraries have been developed to streamline ease of access and use of the technology. This project aims to create clear, in-depth documentation outlining the creation of an optical character recognition program, specifically for capitalized English alphabet characters, using an image classification model to translate images into the respective alphabet characters they represent.

1.1 Problem

The problem that is being addressed by this project is the creation of an image classification algorithm to convert pixel data from an image of an upper-case letter to the corresponding text chararacter.

1.2 Inputs and Outputs

Inputs to the program will be pixel data from images of characters to be identified.

Outputs of the program will be a probability that the image depicts one of the English alphabet letters in the set of {A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z}.

1.3 Environment

This will be a cross-platform (ie. Windows, Linux or Mac) program able to operate on any modern laptop or desktop.

2 Goals

The end goal of this project is to accurately identify capital letters consistently, with a reasonable amount of confidence.

3 Stretch Goals

Furthermore, beyond the intended scope the project, if possible a stretch goal would be improving the program so that it would be useable for all other printing ASCII characters.