Dataset choice

For this project, I would like to develop a model that allows the user to take a picture of a hand-written n×m matrix, and it would be converted in a 2D array format for computational purposes (to calculate the inverse of the matrix or its transpose, and if possible make operations on multiple matrices such as matrix multiplication)
I would be using the MNIST in CSV dataset on Kaggle (https://www.kaggle.com/oddrationale/mnist-in-csv) as it provides a popular dataset that has usually been used to obtain good results for digit classification, which is part of what I want to do for my project.

Methodology

Data Preprocessing
When reading the dataset in the model, it is useful to read the pixel values of each image as these will be used by our model to classify each image fragment as one of the 9 digits. Furthermore, it could be useful to normalize these values by dividing each of them by 255 (the maximum value of the pixel) and determining the pixels with the same intensity independently of the digit.

Machine learning model
There are two models that would be necessary to implement this project, an object localization model to identify the position of the different digits on the picture and a digit classification model to identify the different digits once their position has been determined. This classification would best be accomplished using a convolutional neural net (CNN) with the pixel values as the input and the 9 digits as the potential outputs that will be associated with a weight based on the input.

Application
For the demo, it would be more useful to showcase the project working, so I would be developing a landing-page web app for the application.