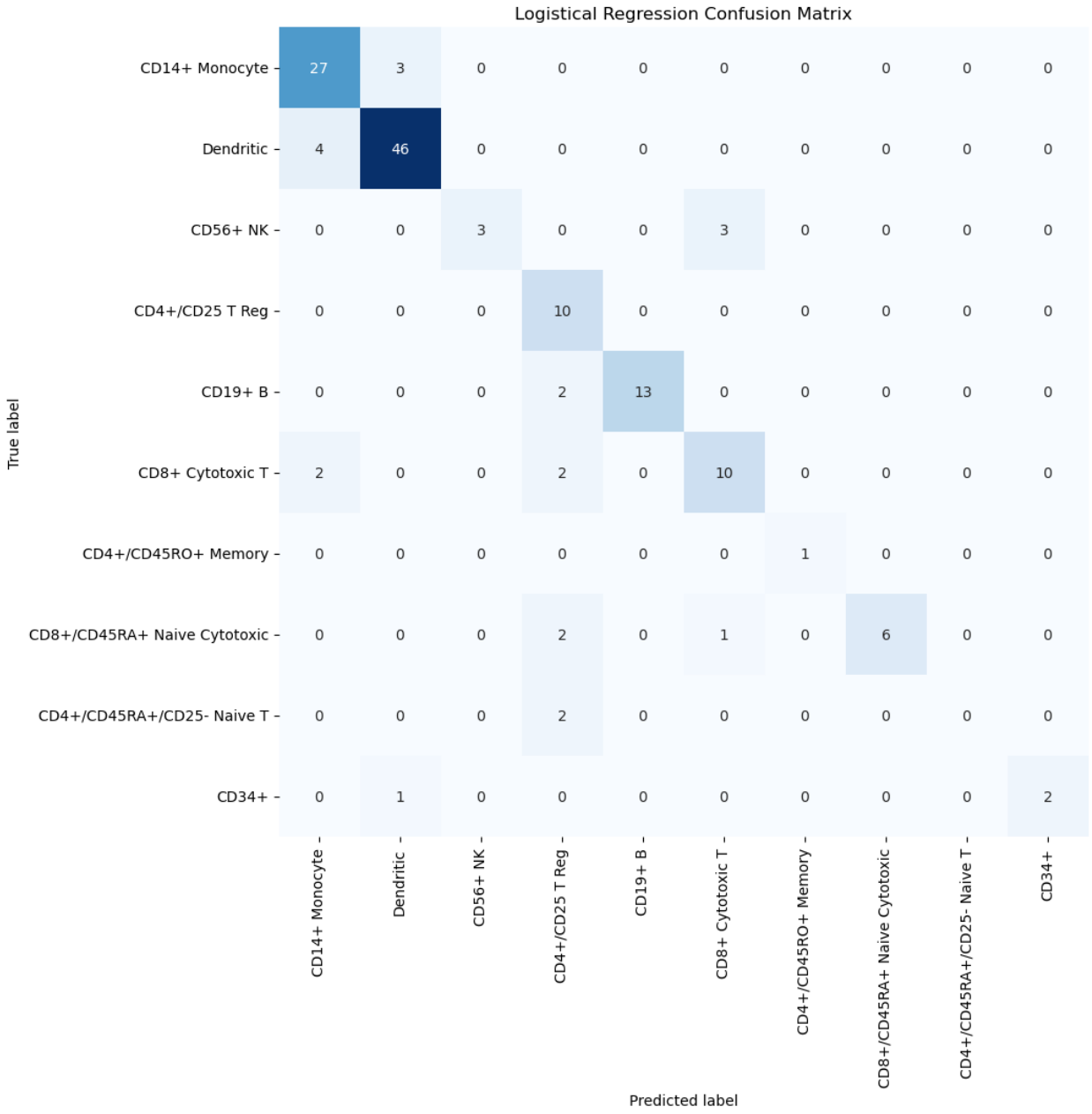

Figure 1: Logistical Regression Visual

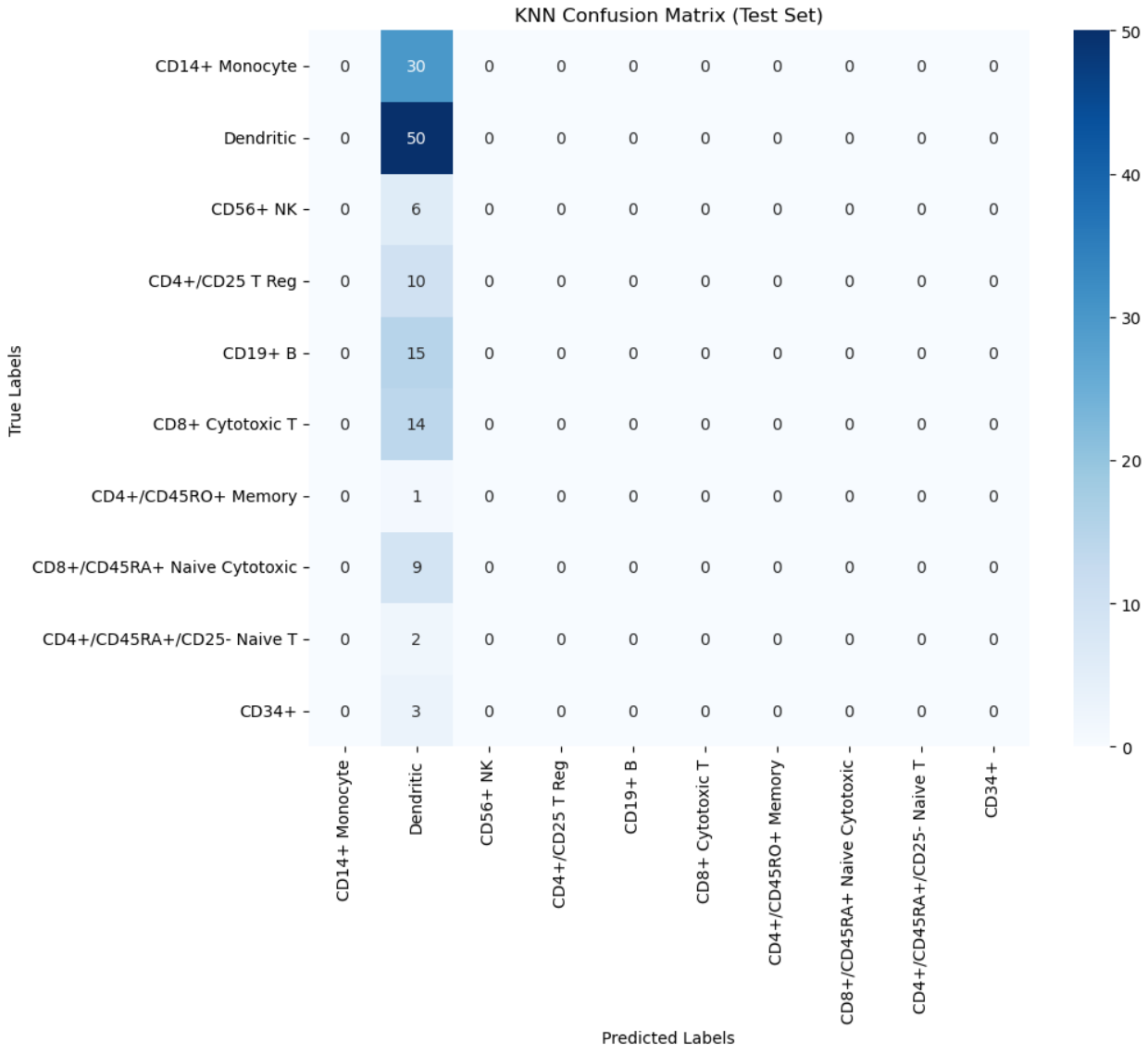

Figure 2: KNN Visual

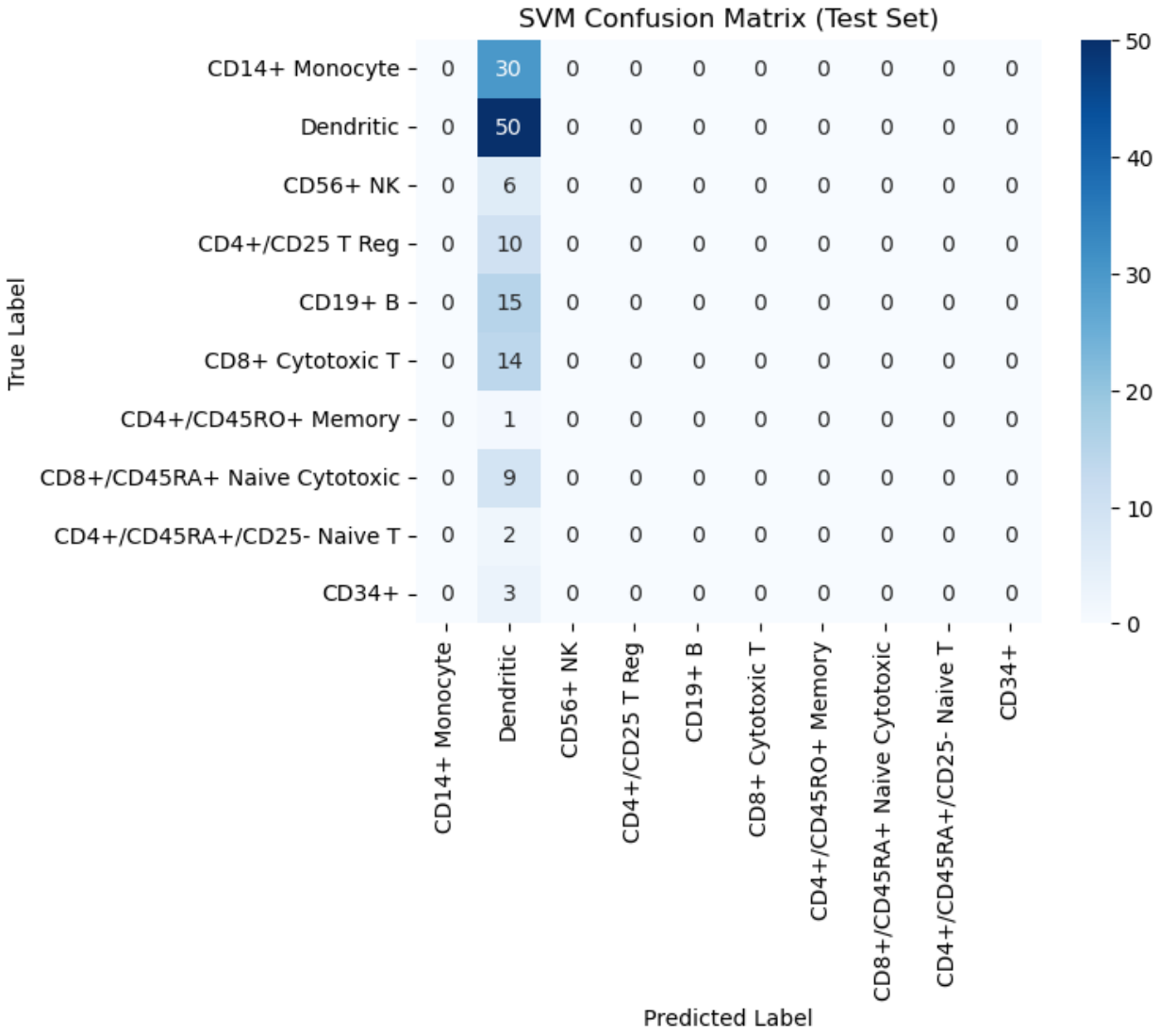

Figure 3: SVM Visual

I evaluated the performance of three classification methods: Logistic Regression, Support Vector Machines (SVM), and k-Nearest Neighbors (KNN), for cell classification. Logistic Regression yielded the highest results, with a validation accuracy of 0.8286 and a test accuracy of 0.8429. In contrast, SVM and KNN demonstrated much lower figures, with SVM achieving a validation accuracy of 0.3643 and a test accuracy of 0.3571, and KNN achieving a validation accuracy of 0.5786 and a test accuracy of 0.5714. Confusion matrices were utilized to visually depict the classification outcomes. The ideal classifier would produce a predominantly diagonal heatmap, but only the Logistic Regression method showed a similar image, while SVM and KNN exhibited significant underperformance. Notably, both SVM and KNN resulted in major misclassifications, with all cell types being incorrectly classified as Dendritic. These findings suggest that Logistic Regression is the optimal classification method for the given dataset.