Data Wrangling & Visualization: First Checkpoint Interactive Visualization of UMAP Algorithm on User Data

Nikita Zagainov, Dmitry Tetkin, Nikita Tsukanov March 2025

1 Results Of Data Collection & Preprocessing

As it was stated in project proposal, our project has little data processing, this is why our main focus during this checkpoint was on algorithm implementation.

2 Our Work So Far

During the first spring, our team adapted the original UMAP implementation to be able to stream intermediate results of the descent. Our contribution can be found in this repository.

3 Demo

Figure 1 shows the visualization of the UMAP algorithm applied to MNIST dataset. The code to reproduce this visualization can be found in our repository, in the notebooks/visualization_example.ipynb notebook.

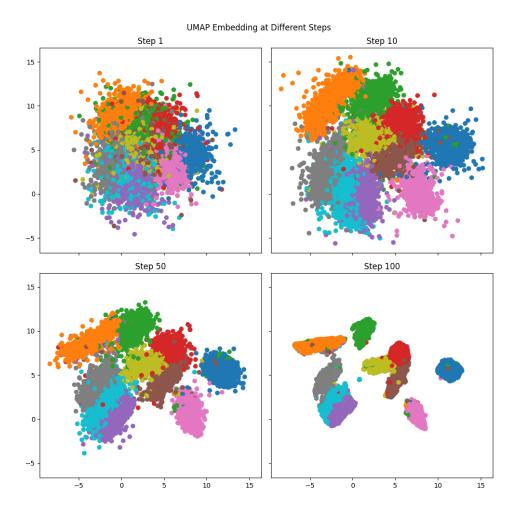


Figure 1: UMAP Steps Visualization on MNIST dataset. Different colors correspond to different labels (digits), algorithm had no access to true labels during learning embedding