CS663
Assignment 4 - Q4

Kalpesh Krishna
Pranav Sankhe
Mohit Madan

The function `mySVD()` accepts any matrix input. If $A = U\Sigma V^T$, and A has dimensions (m, n), the function will output U, V and a vector S of size $(m, 1)$ which contains the singular values of A sorted in descending order. Some values of S might be zero, which correspond to the remaining eigenvalues of AA^T.

In order to align the eigenvectors correctly, we've equated Av_i and $\sigma_i u_i$ (which are expected to be equal). If $||Av_i - \sigma_i u_i||_2 < t$, (t is the tolerance set to 10^{-8}), we've reversed the sign of v_i.

In the main script, the vector S has been converted into the suitable (m, n) format for comparison with A. **MATLAB report attached with this PDF**.