%function[] = PCA\_demo()

% Image fusion by PCA - demo

% by VPS Naidu, MSDF Lab, NAL, Bangalore

clc;

close all;

home;

% insert images

im1 = double(imread('image1.png'));

im2 = double(imread('image2.png'));

figure(1);

subplot(121);imshow(im1,[]);

subplot(122);imshow(im2,[]);

% compute PCA

C = cov([im1(:) im2(:)]);

[V, D] = eig(C);

if D(1,1) >= D(2,2)

pca = V(:,1)./sum(V(:,1));

else

pca = V(:,2)./sum(V(:,2));

end

% fusion

imf = pca(1)\*im1 + pca(2)\*im2;

figure(2); imshow(imf,[]);

Graphical user interface, application

Description automatically generated