Họ tên: Lý Trọng Nhân

MSHV: CH1601015

Link GitHub: <https://github.com/vra-nhanlt/vra-nhanlt>

Hàm hiển thị 1 ảnh

function buoi02\_showanimage( images, labels, number )

figure;

tmpImage = images(:, number);

tmp2DImage = reshape(tmpImage, 28, 28);

tmpLabel = num2str(labels(number));

tmpLabel = [tmpLabel, '(', num2str(number), ')'];

imshow(tmp2DImage);

title(tmpLabel);

end

Buổi 1 VĐ1

function buoi02\_recognition001\_digits()

% Load data

fprintf('\nStarting loading data...')

allTrainingImages = loadMNISTImages('./train-images.idx3-ubyte');

allTrainingLabels = loadMNISTLabels('./train-labels.idx1-ubyte');

allTestingImages = loadMNISTImages('./t10k-images.idx3-ubyte');

allTestingLabels = loadMNISTLabels('./t10k-labels.idx1-ubyte');

fprintf('\nLoading data completed.')

end

Buổi 1 VĐ2

function buoi02\_recognition002\_digits()

% Load data

allTrainingImages = loadMNISTImages('./train-images.idx3-ubyte');

allTrainingLabels = loadMNISTLabels('./train-labels.idx1-ubyte');

allTestingImages = loadMNISTImages('./t10k-images.idx3-ubyte');

allTestingLabels = loadMNISTLabels('./t10k-labels.idx1-ubyte');

% Get figures

trainingImagesCount = size(allTrainingImages, 2);

trainingLablesCount = size(allTrainingLabels, 1);

testingImagesCount = size(allTestingImages, 2);

testingLablesCount = size(allTestingLabels, 1);

sizeOfTrainingImage = size(allTrainingImages, 1);

% Show figures

fprintf('\n trainingImagesCount: %d', trainingImagesCount);

fprintf('\n trainingLablesCount: %d', trainingLablesCount);

fprintf('\n testingImagesCount: %d', testingImagesCount);

fprintf('\n testingLablesCount: %d', testingLablesCount);

fprintf('\n sizeOfTrainingImage: %d', sizeOfTrainingImage);

end

Buổi 1 VĐ3

function buoi02\_recognition003\_digits()

% Load data

allTrainingImages = loadMNISTImages('./train-images.idx3-ubyte');

allTrainingLabels = loadMNISTLabels('./train-labels.idx1-ubyte');

allTestingImages = loadMNISTImages('./t10k-images.idx3-ubyte');

allTestingLabels = loadMNISTLabels('./t10k-labels.idx1-ubyte');

% Get trainingImagesCount

trainingImagesCount = size(allTrainingImages, 2);

% Show the first training image

buoi02\_showanimage(allTrainingImages, allTrainingLabels, 1);

% Show the last training image

buoi02\_showanimage(allTrainingImages, allTrainingLabels, trainingImagesCount);

end

Buổi 1 VĐ4

function buoi02\_recognition004\_digits()

% Load data

allTrainingImages = loadMNISTImages('./train-images.idx3-ubyte');

allTrainingLabels = loadMNISTLabels('./train-labels.idx1-ubyte');

allTestingImages = loadMNISTImages('./t10k-images.idx3-ubyte');

allTestingLabels = loadMNISTLabels('./t10k-labels.idx1-ubyte');

% Show random training image

% Init a random number

trainingImagesCount = size(allTrainingImages, 2);

randomNumber = randi([1 trainingImagesCount]);

% Show image

buoi02\_showanimage(allTrainingImages, allTrainingLabels, randomNumber);

% Show random testing image

% Init a random number

testingImagesCount = size(allTestingImages, 2);

randomNumber = randi([1 testingImagesCount]);

% Show image

buoi02\_showanimage(allTestingImages, allTestingLabels, randomNumber);

end