Sign Language Recognition

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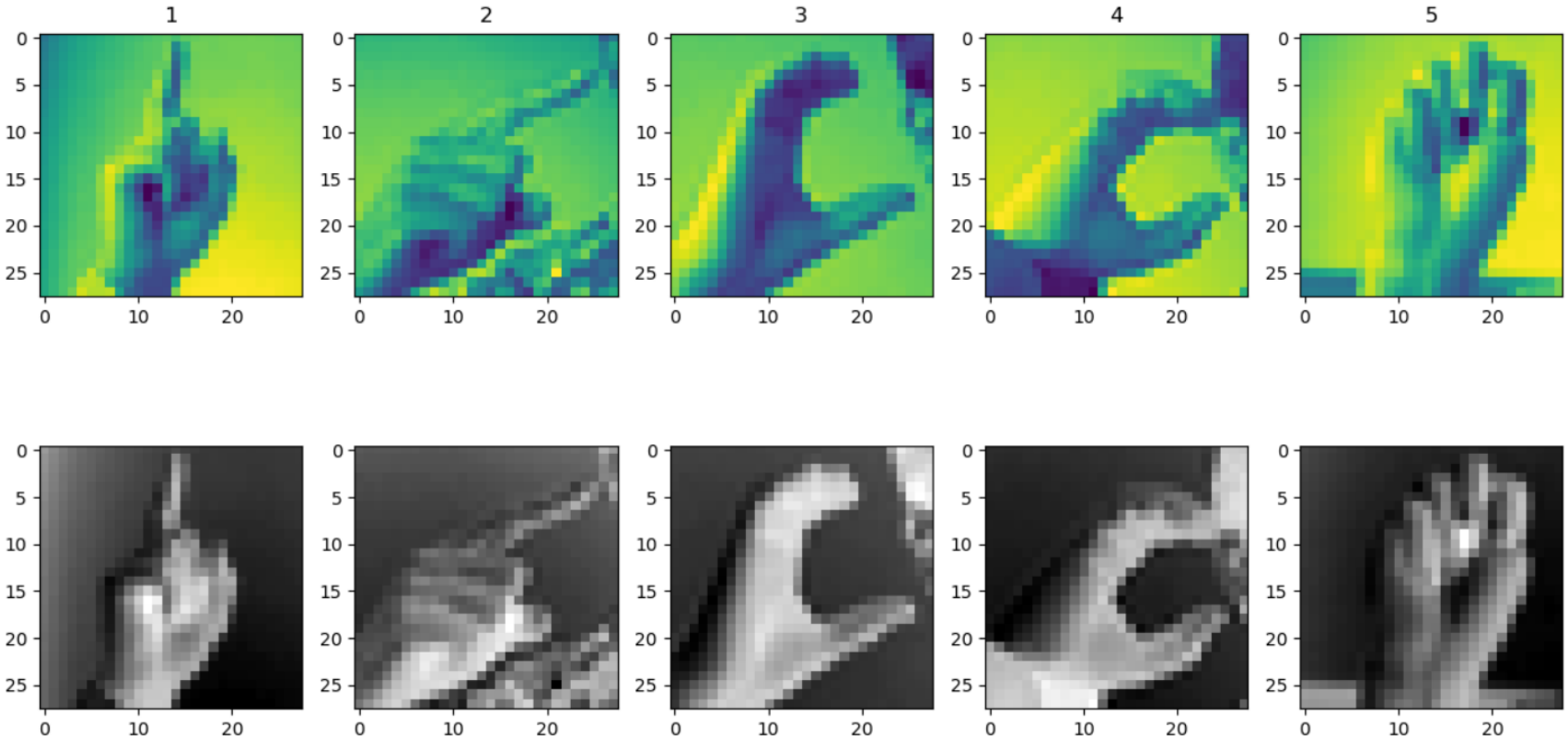
Resources

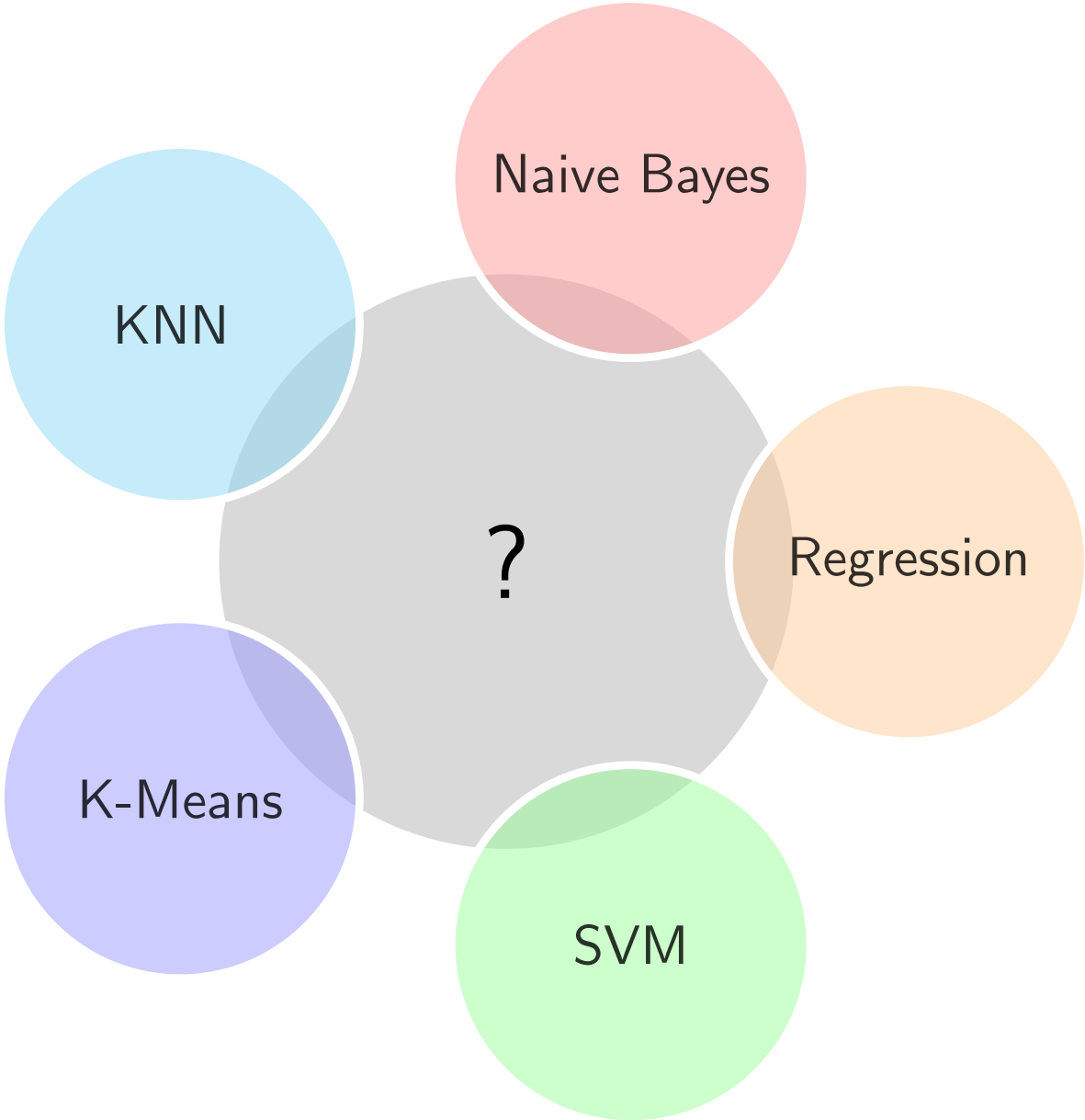
- Dataset: MNIST-Sign Language Recognition from Kaggle
  - Training data: 27455 images
  - Testing data: 7172 images
  - Image size: 28px * 28px

Training Images



Dependencies

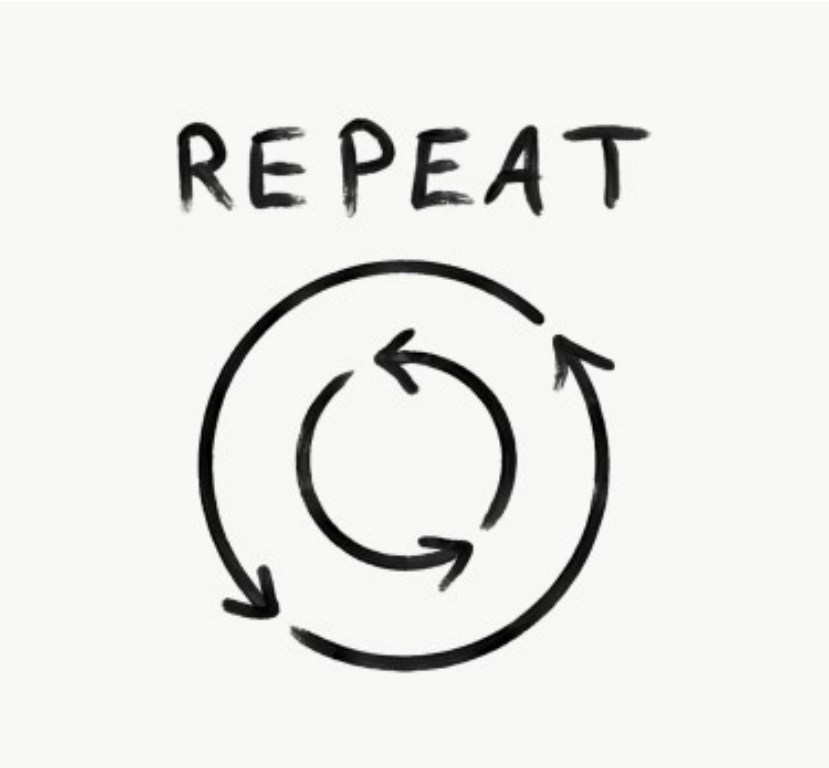
- Language: Python3
  - Pandas: Reading dataset
  - Numpy: Data processing
  - Matplotlib: Data visualization
  - Scikit-learn: ML algorithms
- Keras: Building deep learning models
- Tensorboard: Analyzing my model
- OpenCV: Image processing


Naive Bayes
KNN
?
Regression
K-Means
SVM

K Nearest Neighbors

- Memorizes not learns
- Cost of computation very high
- The curse of dimensionality
- Large memory requirements

VSCode to Jupyter Notebook



Support Vector Machine

- Complicated hyperplane
- High training time
- Hard to visualize

Convolutional Neural Network

- Feature learning
- Outperforms other algorithms
- High computational cost

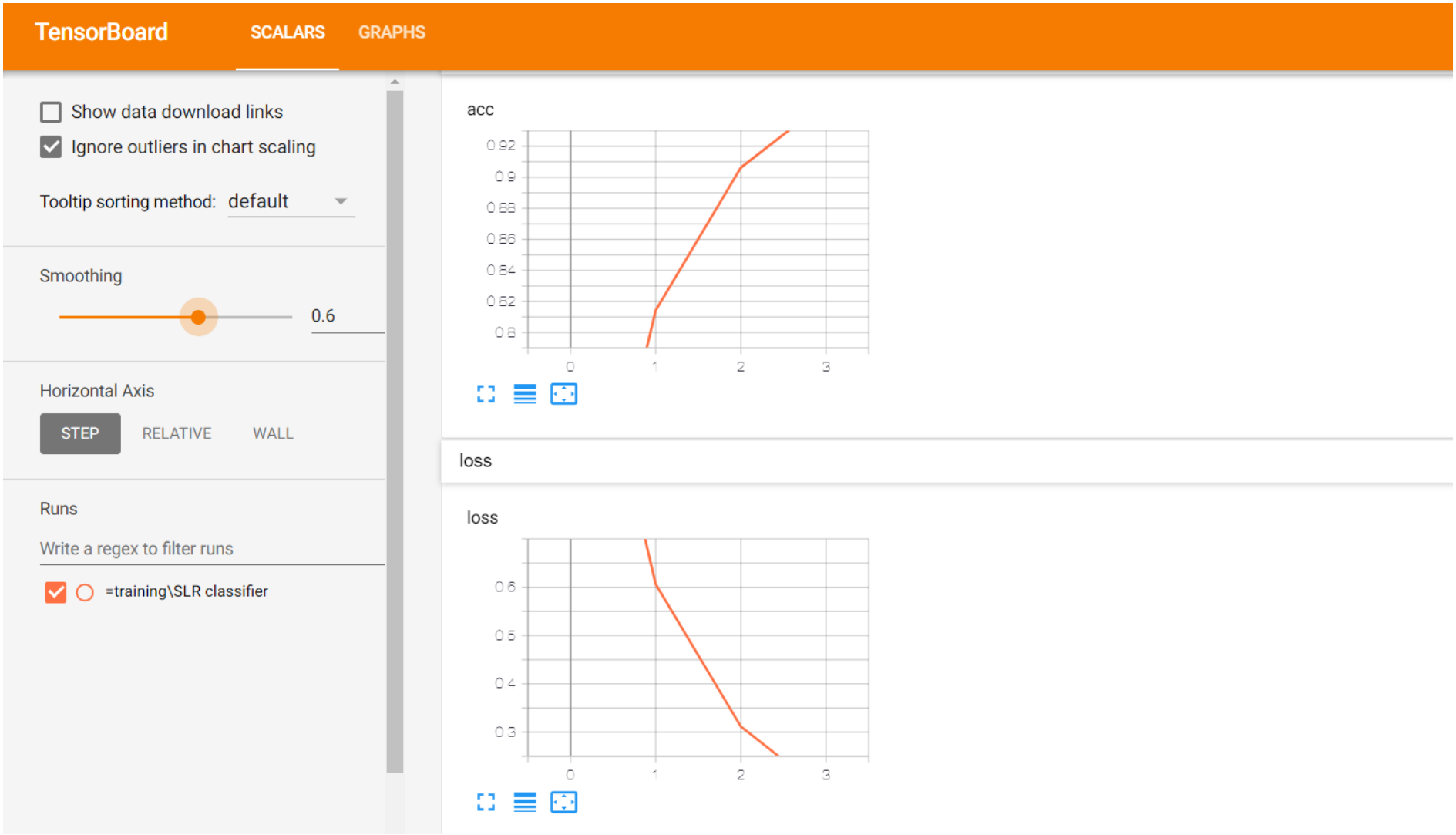
Challenges during CNN

- Parameters to different layers

Challenges during CNN

- Parameters to different layers
- Overfitting due to repeated training

Convolutional Neural Network



Goals

- Short Term Goal
  - Recognizing the alphabets of the English Language
- Long Term Goal
  - Recognizing complete words and sentences

Discussions