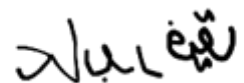# truID

TECHNOLOGIES PVT. LTD.

Internship Certificate

It is certified that **Ahmad Raza** has worked as an Machine Learning intern from June 12, 2023, to August 11, 2023 within truID Technologies, National Science and Technology Park(NSTP), NUST. During his stay at truID, Ahmad performed the following tasks:

1.   Machine learning Basics: Classification algorithms(KNN, Naive Bayes, Decision trees, Random forest, SVM) and Regression(Linear and polynomial Regression)
2.   Machine learning concepts: Bias-Variance trade-off, generalizability, PCA, EDA, Performance Metrics, Loss functions, Regularization, Feature selection.
3.   Unsupervised Learning: K-means clustering, elbow method, Classification using clustering.
4.   General Concepts: Convolution, Image operations(histogram equalization, image smoothing,), Normalization
5.   Deep Learning Concepts: Back Propagation, Learning rate, loss functions, Optimizers, Regularization, Hyperparameters.
6.   Deep Learning Algorithms: Neural Networks, Convolutional Neural Networks(Alexnet, ResNet, VGG), RNNs, YOLOv8.
7.   Hands-on Implementation: Python, using sklearn, numpy, pandas, matplotlib, pytorch, Google COLAB, CVAT + labelme for data annotation
8.   Project: Identity card detection and key point localization using YOLOv8 + Custom dataset preparation.

During his stay at truID, Ahmad has worked diligently and with a great passion for learning new things. He remained punctual throughout the internship period and has contributed both individually as well as a team member. We wish him success in the future.

Date: September 13th, 2023

Yours Truly
Dr. Abid Rafique
CEO, truID