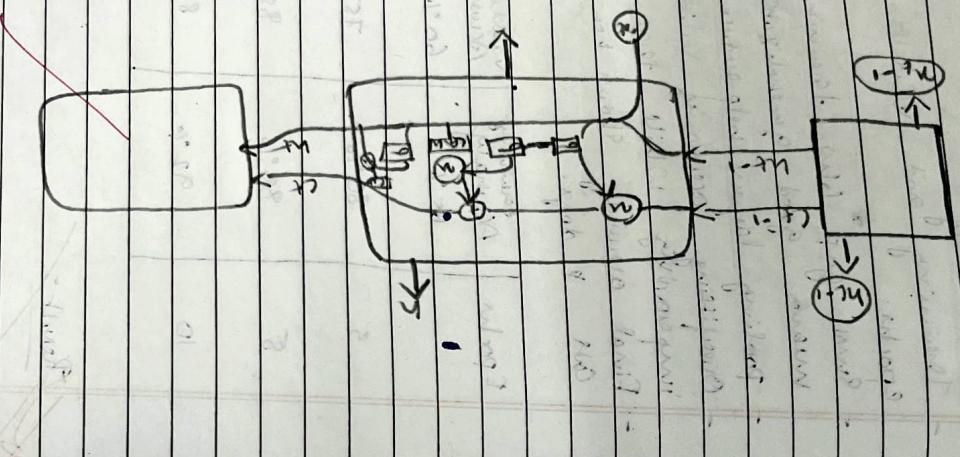


2025
A-10-25

LSTM Architecture?



LAB-8

Experiment Using LSTM

Aim: To develop and evaluate a Long Short Term memory (LSTM) for sequence prediction.

Objectives:

1. Preprocess and prepare sequential data.
2. Build and train LSTM network.
3. Evaluate model performance using accuracy and loss metrics.

Pseudo Code:

- Load dataset
- Preprocess \rightarrow normalize & reshape
- Split into train / test.
- Initialize LSTM Model.
- Compile (Optimizer: 'adam', loss: 'mse')
- Train Model
- Evaluate \rightarrow Accuracy, loss
- Plot results

~~Saved the trained LSTM model and used it to make future prediction on unseen sequential~~

Observation

Loss vs Epoch

VL - Validation loss

TL - Training loss



- The training and validation loss decreased gradually with each epoch, indicating effective learning.
- The LSTM model successfully captured sequential dependency in data.
- Validation loss was close to training loss, showing 'vanilla overfitting'.
- The Model's generalization on unseen data improved as the no. of epochs increased until convergence.

Observation Table

Epoch	Training loss	Validation loss
1	0.125	0.118
10	0.045	0.048
20	0.032	0.035

Result

The LSTM model achieved high accuracy with low loss, preventing overfitting from regular predictions taken.