

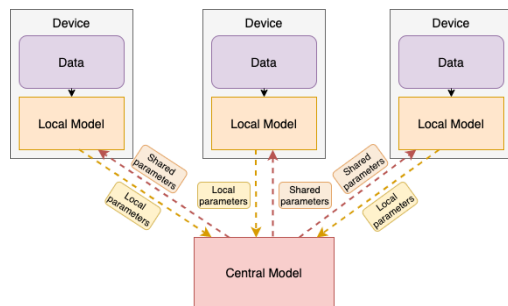
# Leveraging Few-shot with Federated Learning and Ensembling for Text Classification

## Context

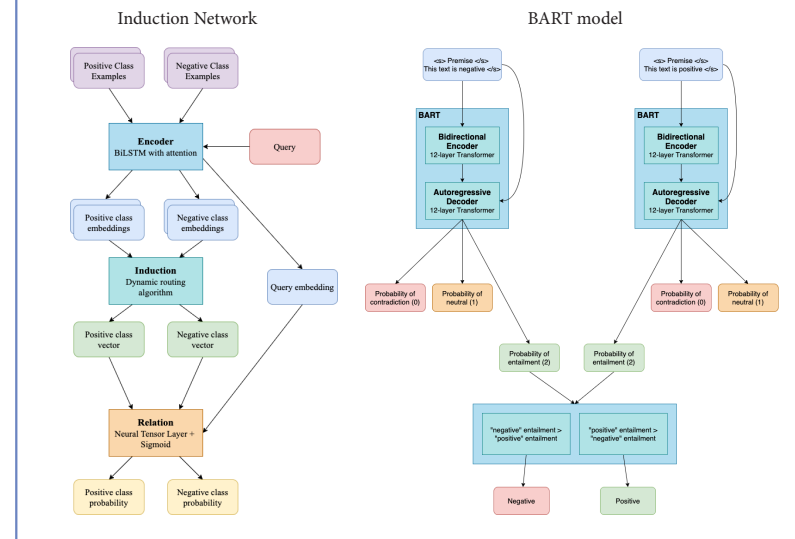
- Privacy is being increasingly regarded as crucial when handling data
- Traditionally, ML models need access to all available data simultaneously to be trained
- Federated Learning (FL) proposes a solution:

Train individual models → Few Shot Learning  
Merge into a central model → Ensemble Learning

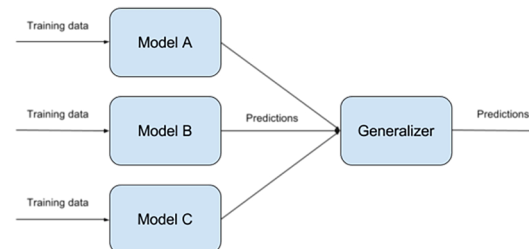
## Federated Learning



## Architectures



## Ensemble Learning



## Results

Model	Acc (%)
IN Benchmark	85.6
IN reproduced	83.9
Node 1	83.5
Node 2	83.3
Node 3	83.1
Averaging Stacking	<b>84.6</b>

Table 1: IN Results.

Model	Acc (%)
BART ZSL	83.0
Books	85.1 (±0.23)
DVD	85.2 (±0.11)
Electronics	84.4 (±0.39)
Kitchen H.	85.6 (±0.12)
Average	86.0(±0.0)
Weighted Avg	85.8(±0.0)
Federated Avg	85.7(±0.0)
Stacking	<b>86.3(±0.0)</b>

Table 2: BART Results.

Our results are comparable to state of the art (IN) and the BART model trained on the full dataset.