Neural Networks at a Fraction: Table Structure Recognition

Aritra Mukhopadhyay

Objective: To make quaternion versions of the Table Transformer (TATR) model and deploy in a low powered mobile device with limited memory and computational power.
Dataset: PubTables-1M, FinTabNet, ICDAR 2013
Baseline models: Table Transformer (TATR) model
Relevant Papers:

- End-to-End Object Detection with Transformers (2020)
  from *Facebook AI Research (Nicolas Carion, Francisco Massa et al.)*
- GriTS: Grid table similarity metric for table structure recognition (2022)
  from *Microsoft Research (Brandon Smock, Rohith Pesala, Robin Abraham)*
- Aligning benchmark datasets for table structure recognition (2023)
  from *Microsoft Research (Brandon Smock, Rohith Pesala, Robin Abraham)*

Midway Plans:

- Understand the GriTS metrics
- Learn about transformers
- Understand the DE:TR model and pipeline
- Understand the TATR model and dataset
- LTH on pretrained TATR on the FinTabNet dataset
- Compare Finetuned pruned model vs pruned finetuned model

Further Plans:

- Make quaternion version of the TATR model
- LTH on Quaternion TATR model
- Production

Expected Results:

Microsoft Lens App will have a better Table Structure Recognition model that will be able to run on low powered mobile devices with limited memory and computational power.