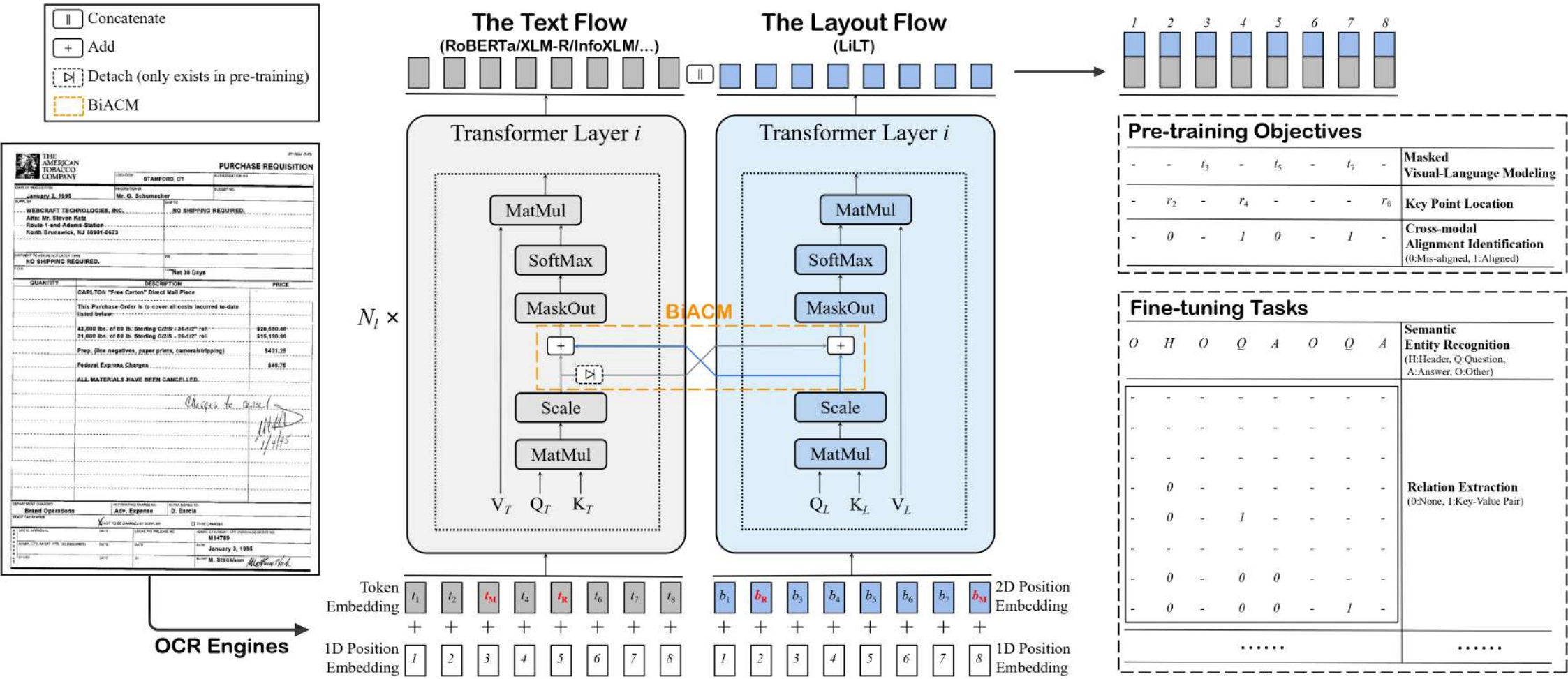
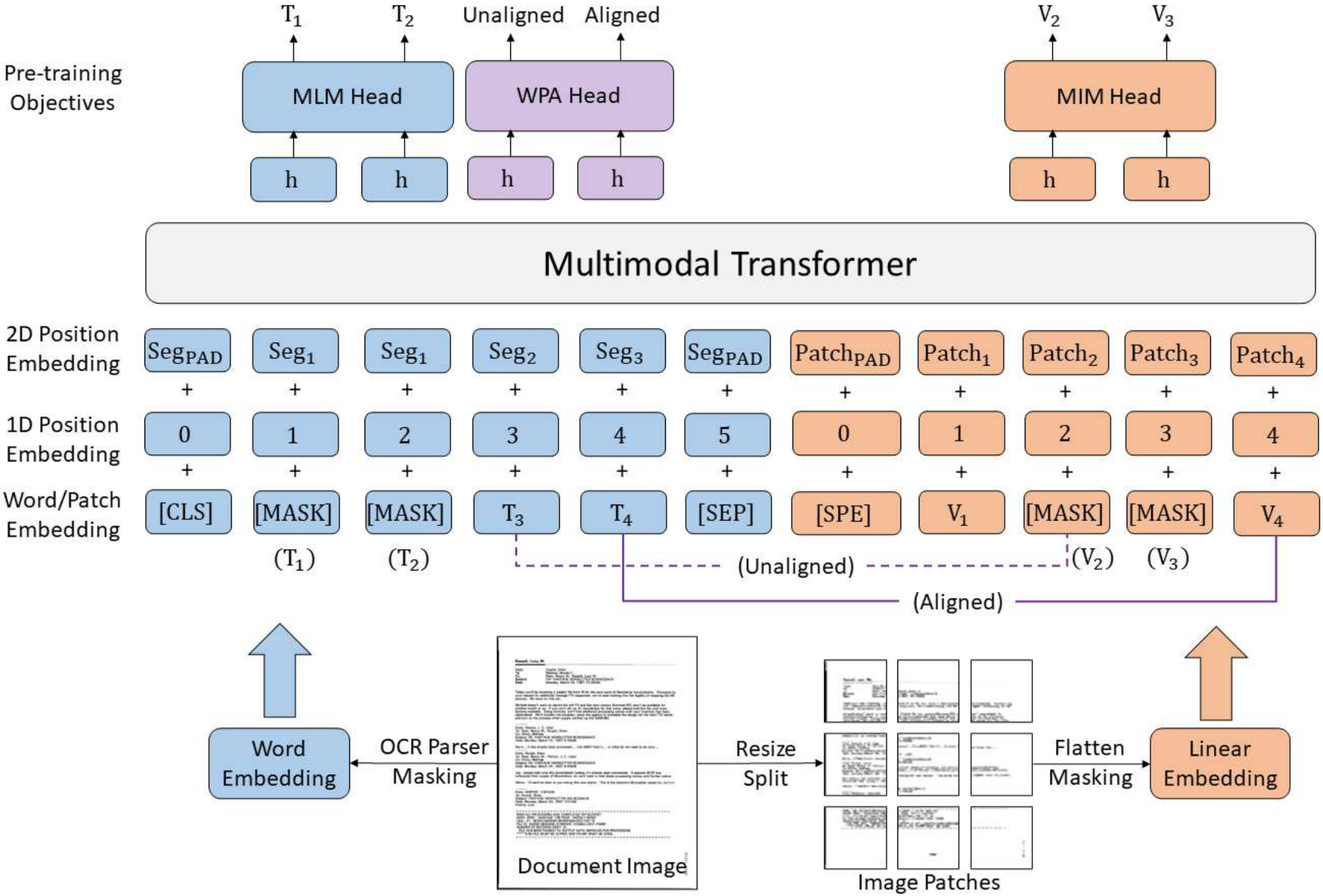

Concatenate
Add
Detach (only exists in pre-training)
BiACM
THE AMERICAN TOBACCO COMPANY
PURCHASE REQUISITION
STAMFORD, CT
January 3, 1995
Mr. G. Schumacher
WEBCRAFT TECHNOLOGIES, INC.
Attn: Mr. Steven Katz
Route 1 and Adams Station
North Brunswick, NJ 08901-0623
NO SHIPPING REQUIRED.
Net 30 Days
QUANTITY
DESCRIPTION
PRICE
CARLTON "Free Carton" Direct Mail Piece
This Purchase Order is to cover all costs incurred to-date listed below:
42,000 lbs. of 60 lb. Sterling C/2/S - 36-1/2" roll
31,000 lbs. of 60 lb. Sterling C/2/S - 26-1/2" roll
$20,580.00
$15,190.00
Prep. (line negatives, paper prints, camera/stripping)
$431.25
Federal Express Charges
$48.75
ALL MATERIALS HAVE BEEN CANCELLED.
Charges to cost 1
1/4/95
Brand Operations
Adv. Expense
D. Garcia
M14789
January 3, 1995
M. Stecklein
OCR Engines
The Text Flow
(RoBERTa/XLM-R/InfoXLM/...)
The Layout Flow
(LiLT)
Transformer Layer i
Transformer Layer i
MatMul
SoftMax
MaskOut
Scale
MatMul
BiACM
N_l ×
V_T Q_T K_T
Q_L K_L V_L
Token Embedding
1D Position Embedding
2D Position Embedding
1D Position Embedding
1 2 3 4 5 6 7 8
Pre-training Objectives
Masked Visual-Language Modeling
Key Point Location
Cross-modal Alignment Identification
(0:Mis-aligned, 1:Aligned)
Fine-tuning Tasks
O H O Q A O Q A
Semantic Entity Recognition
(H:Header, Q:Question, A:Answer, O:Other)
Relation Extraction
(0:None, 1:Key-Value Pair)


Pre-training Objectives
T1
T2
Unaligned
Aligned
V2
V3
MLM Head
WPA Head
MIM Head
h
Multimodal Transformer
2D Position Embedding
1D Position Embedding
Word/Patch Embedding
SegPAD
Seg1
Seg2
Seg3
PatchPAD
Patch1
Patch2
Patch3
Patch4
0
1
2
3
4
5
[CLS]
[MASK]
[SEP]
[SPE]
V1
T3
T4
V4
(T1)
(T2)
(V2)
(V3)
(Unaligned)
(Aligned)
Word Embedding
OCR Parser
Masking
Document Image
Resize
Split
Image Patches
Flatten
Masking
Linear Embedding

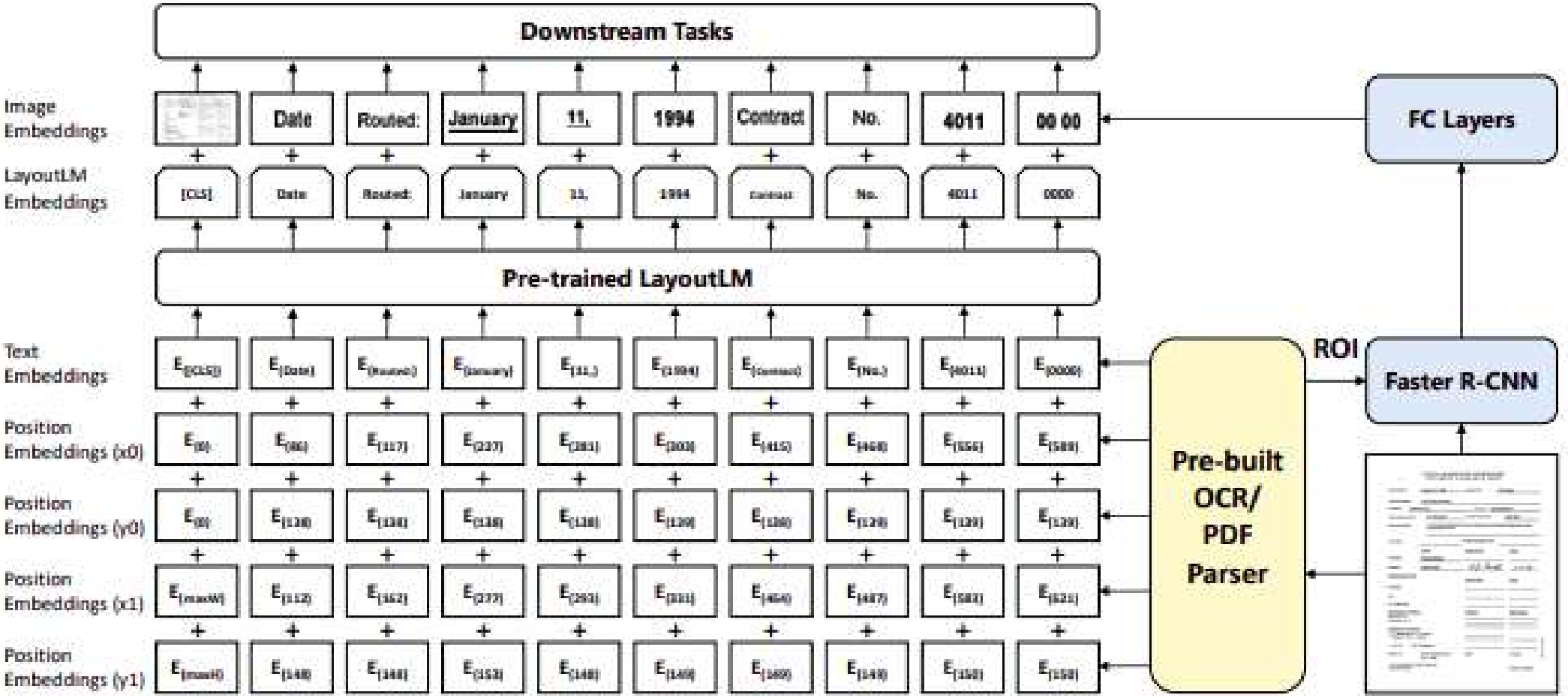
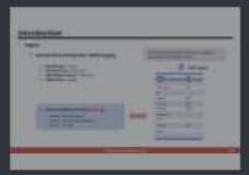


Figure 2: An example of LayoutLM, where 2-D layout and image embeddings are integrated into the original BERT architecture. The LayoutLM embeddings and image embeddings from Faster R-CNN work together for downstream tasks.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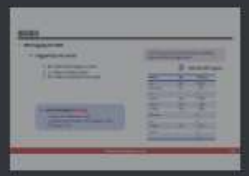
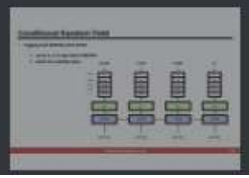

4


5



BIOES

- **BIOES tagging (BIO variants)**
  - **Tagged by one word**
    - **B** : token that begins a span
    - **I** : tokens inside a span
    - **O** : tokens outside of any span
    - **E** : token that ends a span
    - **S** : token that gets single span

Words	Tag	BIO Tag	BIOES Tag
Jane	PER	B-PER	B-PER
Villanueva	PER	I-PER	E-PER
of		O	O
United	ORG	B-ORG	B-ORG
Airlines	ORG	I-ORG	I-ORG
Holding	ORG	I-ORG	E-ORG
discussed		O	O
the		O	O
Chicago	LOC	B-LOC	S-LOC
route		O	O
.		O	O