



Technical Question Answering across Tasks and Domains

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Introduction/Motivation (Given a question, our goal is to identify the best document and find the appropriate answer from the document.)

[User Question] We use Data Studio 3.1.1.0 with DB2 WSE V9.7 FP11 on Windows 2008. While trying to new version of Data Studio 4.1.2, we are able to install it successfully. But unable to remove the existing 3.1.1.0, getting the JVM error "Could not find the main class". Is it a bug or something? How we can delete it?

[Answer] Please try to uninstall all products including Install Manager (IM) then reinstall IM and Data Studio 4.1.2.

Question
How can I uninstall Data Studio 3.1.1 where Control Panel uninstall process gets an error?

Answer
We are able to install Data Studio (DS) 4.1.2 successfully but unable to uninstall the existing Data Studio 3.1.1. When I uninstall Data Studio 3.1.1 from Control Panel, it raises an error message pop-up window and can not uninstall it. Here is the message: [Java Virtual Machine Launcher] x Could not find the main class: com.zerog.jax.IAX. Program will exit. How can I uninstall Data Studio 3.1.1 where Control Panel process gets an error?

Cause
It is an known behavior/limitation.

Answer
It may be happened where two versions Data Studio 3.1.1 and 4.1.2 installed machine. Here is an workaround. Please try to uninstall all products including Install Manager (IM) then reinstall IM and Data Studio 4.1.2. Below are detailed steps:

[TechNote]
Please try to uninstall all products including Install Manager (IM) then reinstall IM and Data Studio 4.1.2.

1. Use IM
2. Identify them up.
Example: `C:\Program Files\IBM\IBMIMShared\SDPShared`
3. Delete IBM Installation Manager.
Example on Windows:
- Delete the IM install directory:
C:\Program Files\IBM\Installation Manager\ - Delete the Appdata directory (IM Agent Data): Windows 7: C:\ProgramData\IBM\Installation Manager - Delete the Windows registry (regedit) entry: HKEY_LOCAL_MACHINE\SOFTWARE\IBM\Installation Manager - Re-install IM
4. Reinstall DS 4.1.2 and other products.

Figure: A question-answer example in the IT support domain

Proposed Method (TransTD jointly learns snippet prediction and document matching, applying it on both general domain QA and technical domain QA.)

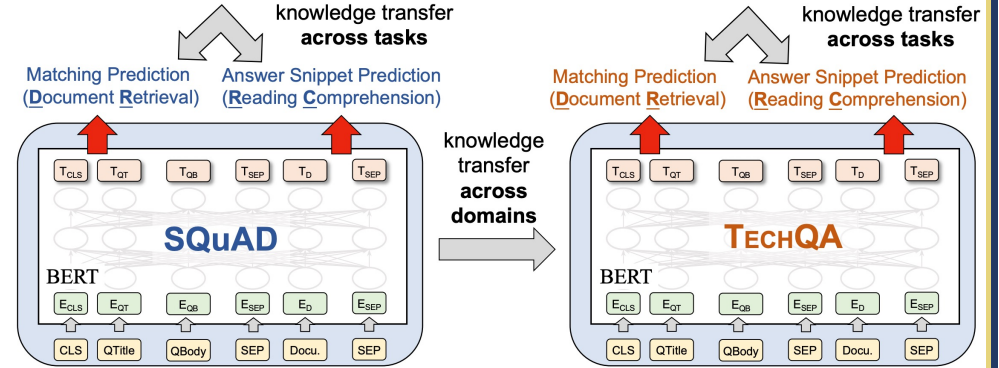


Figure: The overall architecture of TransTD

Proposed System (knowledge transfer across tasks and domains)

Table 1: Ablation study on knowledge transfer across tasks and across domains on TechQA.

Methods	Adjustable	Source task(s)	Target task(s)	Reading Comprehension			Document Retrieval		
				Ma-F1	HA-F1@1	HA-F1@5	MRR	R@1	R@5
BERT _{DR}	-	✗	-	DR	-	-	55.80	45.58	58.23
BERT _{RC}	-	✗	-	RC	52.49	24.92	37.26	51.20	48.13
TransD	-	✗	RC	DR	-	-	60.63	58.13	64.38
	-	✗	RC	RC	55.31	34.69	50.52	64.60	60.63
TransT	CLS	✗	-	RC+DR	53.43	26.83	38.50	51.19	46.88
	Mean	✗	-	RC+DR	52.30	26.28	41.50	52.68	47.50
TransTD	CLS	✗	RC+DR	RC+DR	56.43	39.12	52.30	66.79	64.38
	Mean	✗	RC+DR	RC+DR	56.88	37.96	49.83	67.55	67.50
TransTD ⁺	CLS	✓	RC+DR	RC+DR	56.66	38.33	50.95	67.80	65.00
	Mean	✓	RC+DR	RC+DR	58.58	40.28	52.57	67.98	66.88

Table 2: TransTD outperforms two-stage retrieve-then-read methods that retrieve document based on semantic alignment. k is the number of retrieved documents.

Method	Setting	Ma-F1	HA-F1@1	R@1
BERTserini (Yang et al., 2019a)	k=1	51.34	15.23	30.00
(with BM25 as retriever)	k=5	56.60	28.31	48.75
DPR (Karpukhin et al., 2020)	k=1	53.22	15.57	26.25
(w/o pre-trained retriever)	k=5	56.47	30.40	47.50
DPR (Karpukhin et al., 2020)	k=1	54.82	19.46	30.63
(with pre-trained retriever)	k=5	58.56	33.03	53.13
TransTD-Mean ⁺ (Ours, S _{with})	-	58.58	40.28	66.88

Table 3: Our proposed snippet ranking function can bring additional improvements. Using $(p_s[0] + p_e[0])$ reflects the degree of misalignment between Q and D .

Snippet ranking method	Ma-F1	HA-F1@1	R@1
MP-BERT (Wang et al., 2019)	49.45	24.65	43.75
(S _{MP-BERT} = $p_{DR} \cdot p_s \cdot p_e$)			
WKLM (Xiong et al., 2020)	57.82	39.71	66.25
(S _{BERT} = $\alpha \cdot p_{DR} + p_s + p_e$)			
Ours (w/o document score)	58.58	40.28	65.00
(S _{w/o} = $p_s + p_e - p_s[0] - p_e[0]$)			
Ours (with document score)	58.58	40.28	66.88
(S _{with} = $\alpha \cdot p_{DR} + S_{w/o}$)			

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