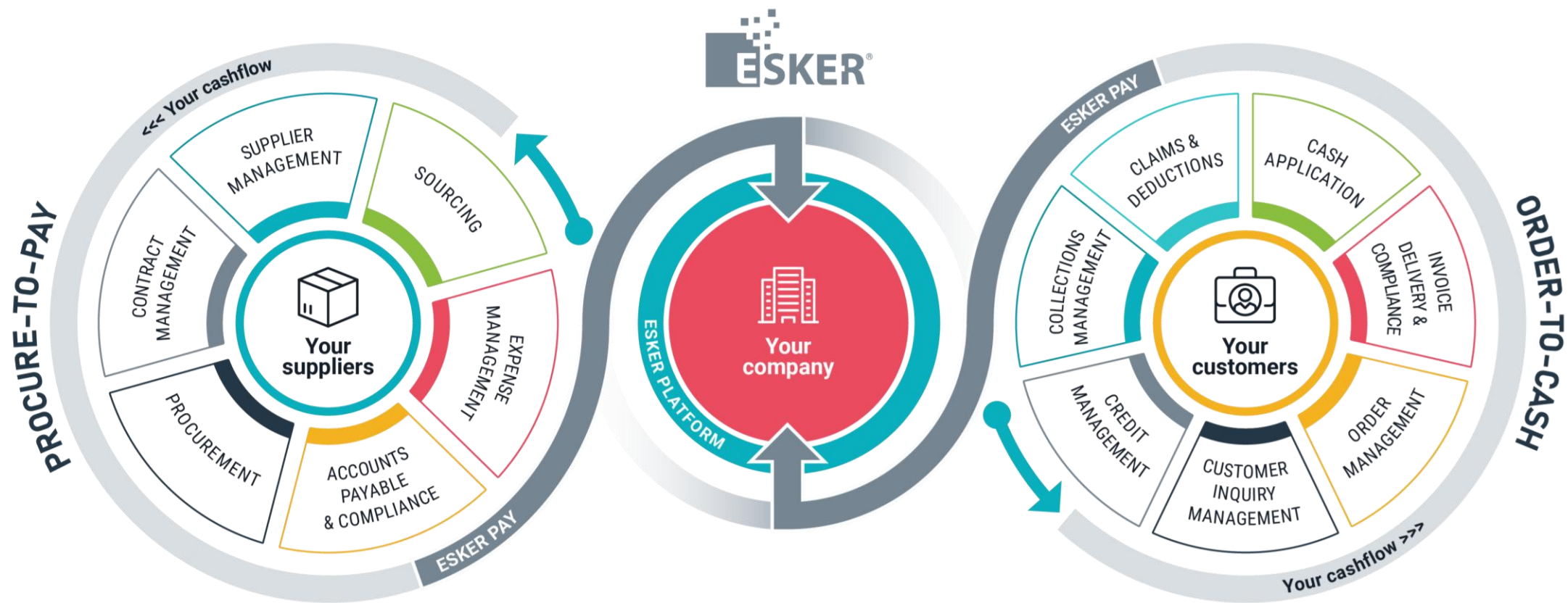


Une thèse CIFRE en Machine Learning

Entre recherche et industrie

1

Mise en contexte



Documents d'entreprise

 CITY OF BOSTON MAINTENANCE Computer Club Market 1 345 Congress Street BOSTON, MA 02215 Phone: 617-427-4300 Fax: 617-555-8475		PURCHASE ORDER PO Number: #0648320 PO Date: 2/6/2014 Delivery Date: 2/6/2014			
Bill to: Computer Club Market 1 345 Congress Street BOSTON, MA 02215		Ship to: Computer Club Market 1 345 Congress Street BOSTON, MA 02215			
Item	Part Number	Description	Quantity	Unit Price	Total
20	7306-639720	Black bulk toner for model 6397	3	\$6.99	170.97
20	7306-639710	YELLOW bulk toner for model 6397	1	71.70	71.70
20	7306-639710	CYAN bulk toner for model 6397	1	71.70	71.70
20	7306-639740	MAGENTA bulk toner for model 6397	1	71.70	71.70
40	CR-102D	8 1/2" x 14" letter paper, 500 sheets	15	6.52	97.80
40	CONT-61	Bos 10 X 8 X 80	5	29.90	149.50
70	CONT-62	Bos 6X 8 X 80	5	19.90	99.50
Total amount: (USD)					732.87

Important

The purchaser order number must appear on all invoices, shipping papers and packages.
 Packing slip must accompany shipment. Invoice each purchase order separately.
 Vendor please note any changes in price or terms need approval before shipment

[illegible]

【特 注 書】								
テスラ株式会社 大阪府中央区東淀町 〒571-0007 Tel.075-323-2444	特 注 書 目	テスラ株式会社 千住環町 42 〒100-1103 Tel.03-713-1224						
当社発注番号 2748771	2017 年 10 月 03 日							
下記の商品、組立品（上）および、品、部品品は当社発注番号（2748771）の行番号及び標準発注番号を必ず記入して下さい。								
<table border="1"> <thead> <tr> <th>品番名・規格</th><th>単位</th></tr> </thead> <tbody> <tr> <td>イ 標準用一セ 210H メガシステム(1.5%) 品番 3900021</td><td>100箱</td></tr> <tr> <td>ロ メガシステム(フレッシュエナジアンターボ)サイズ 1.7L 品番 3900016</td><td>30箱</td></tr> </tbody> </table>	品番名・規格	単位	イ 標準用一セ 210H メガシステム(1.5%) 品番 3900021	100箱	ロ メガシステム(フレッシュエナジアンターボ)サイズ 1.7L 品番 3900016	30箱		
品番名・規格	単位							
イ 標準用一セ 210H メガシステム(1.5%) 品番 3900021	100箱							
ロ メガシステム(フレッシュエナジアンターボ)サイズ 1.7L 品番 3900016	30箱							

买方名称：烟台中远海运物流有限公司		卖方名称：烟台中远海运物流有限公司		联系方式：13953962628		订单日期：2017年05月13日	
订单号：中远海运汽车销售有限公司		销售日期：2017年05月13日		联系方式：13953962628		交货地址：山东省烟台莱山区莱山街道办事处文汇路21号中远海运汽车销售有限公司（以下简称乙方）	
序号	产品名称	规格/型号	计量单位	订购数量	供货数量	单位	备注
6	柴油发电机组	400KW/230V	台	1	1	台	1.00 1.00
9	柴油发电机组	200KW/230V	台	1	1	台	1.00 1.00
12	柴油发电机组	150KW/230V	台	1	1	台	1.00 1.00
13	柴油发电机组	100KW/230V	台	1	1	台	1.00 1.00
14	柴油发电机组	50KW/230V	台	1	1	台	1.00 1.00
17	柴油发电机组	400KW/230V	台	1	1	台	1.00 1.00
18	柴油发电机组	200KW/230V	台	1	1	台	1.00 1.00
19	柴油发电机组	150KW/230V	台	1	1	台	1.00 1.00
20	柴油发电机组	100KW/230V	台	1	1	台	1.00 1.00
21	柴油发电机组	50KW/230V	台	1	1	台	1.00 1.00
22	柴油发电机组	400KW/230V	台	1	1	台	1.00 1.00
23	柴油发电机组	200KW/230V	台	1	1	台	1.00 1.00
24	柴油发电机组	150KW/230V	台	1	1	台	1.00 1.00
25	柴油发电机组	100KW/230V	台	1	1	台	1.00 1.00
26	柴油发电机组	50KW/230V	台	1	1	台	1.00 1.00
27	柴油发电机组	400KW/230V	台	1	1	台	1.00 1.00
28	柴油发电机组	200KW/230V	台	1	1	台	1.00 1.00
29	柴油发电机组	150KW/230V	台	1	1	台	1.00 1.00
30	柴油发电机组	100KW/230V	台	1	1	台	1.00 1.00
31	柴油发电机组	50KW/230V	台	1	1	台	1.00 1.00
32	柴油发电机组	400KW/230V	台	1	1	台	1.00 1.00
33	柴油发电机组	200KW/230V	台	1	1	台	1.00 1.00
34	柴油发电机组	150KW/230V	台	1	1	台	1.00 1.00
35	柴油发电机组	100KW/230V	台	1	1	台	1.00 1.00
36	柴油发电机组	50KW/230V	台	1	1	台	1.00 1.00
37	柴油发电机组	400KW/230V	台	1	1	台	1.00 1.00
38	柴油发电机组	200KW/230V	台	1	1	台	1.00 1.00
39	柴油发电机组	150KW/230V	台	1	1	台	1.00 1.00
40	柴油发电机组	100KW/230V	台	1	1	台	1.00 1.00
41	柴油发电机组	50KW/230V	台	1	1	台	1.00 1.00
42	柴油发电机组	400KW/230V	台	1	1	台	1.00 1.00
43	柴油发电机组	200KW/230V	台	1	1	台	1.00 1.00
44	柴油发电机组	150KW/230V	台	1	1	台	1.00 1.00
45	柴油发电机组	100KW/230V	台	1	1	台	1.00 1.00
46	柴油发电机组	50KW/230V	台	1	1	台	1.00 1.00
47	柴油发电机组	400KW/230V	台	1	1	台	1.00 1.00
48	柴油发电机组	200KW/230V	台	1	1	台	1.00 1.00
49	柴油发电机组	150KW/230V	台	1	1	台	1.00 1.00
50	柴油发电机组	100KW/230V	台	1	1	台	1.00 1.00
51	柴油发电机组	50KW/230V	台	1	1	台	1.00 1.00
52	柴油发电机组	400KW/230V	台	1	1	台	1.00 1.00
53	柴油发电机组	200KW/230V	台	1	1	台	1.00 1.00
54	柴油发电机组	150KW/230V	台	1	1	台	1.00 1.00
55	柴油发电机组	100KW/230V	台	1	1	台	1.00 1.00
56	柴油发电机组	50KW/230V	台	1	1	台	1.00 1.00
57	柴油发电机组	400KW/230V	台	1	1	台	1.00 1.00
58	柴油发电机组	200KW/230V	台	1	1	台	1.00 1.00

 BON DE COMMANDE		Commande n° 0000000000 Date: 18/09/2015 Print le: 03/08/2015	
Page 1/1			
Adresse de livraison : Metal Picardie SA 33 rue de la Tannerie 60270 Guiscard		Adresse de facturation : Metal Picardie SA 33 rue de la Tannerie 60270 Guiscard	
Veuillez traiter cette commande dès réception en respectant les conditions ci-dessous			
Le numéro de commande devra figurer sur les factures, documents de livraison et colis. Un bon de livraison devra accompagner le colis. Veuillez facturer chaque commande séparément.		Fournisseur OES France SA 31 rue des Endres 75015 PARIS	
001 -	T00-639720 x 5 Tonneau Boite 6397 Urgent Livraison le 03/04/2015 Prix unitaire : 56,99 Total : 284,95		
002 -	RT-16400 x 10 Rampeau 500' feuillies T00 feuillies Prix unitaire : 6,52 Total : 65,20		
003 -	COM-030 x 3 Outils suspendus kraft 8 1/2" x 14" Prix unitaire : 15,75 Total : 47,25		
Net à payer:		397,40 EUR	

Metal Picardie - S.A. au capital de 2 500 000 EUR - N° TVA B 698 706 430

				SALES ORDER-NO-25398 DATE-09/19/87 	
SUNBURST, INC. 2885 Sunco Blvd. San Diego, CA 92111 (619) 475-8875 (619) 475-9995					
TO: E&S, Inc. 1201 Lincoln Avenue New York, NY 10019 USA				SHIP TO: SUNBURST, INC. 2885 Sunco Blvd. San Diego, CA 92111 USA	
SALES REP.	JOB	SHIP DATE	SHIP VIA	PAYMENT TERMS	
Jeanne S.	588398	09/01/2017	FED EX	Due on receipt	
QUANTITY	DESCRIPTION		UNIT PRICE	TOTAL	
2	R-1111 P42 Monitor, 20" Color		365.00	730.00	
2	R-1002 Monitor, R 3133 Personal computer		1932.40	3864.80	
2	R-5002 Processor Pentium		530.00	1060.00	
1	R-1111 FlatScreen MS 17SP5		1491.22	1491.22	
5936.02					

[illegible]

Documents d'entreprise

REFITECH FRIDGE SERVICES PTE. LTD.
(GST No.: 888803566G)

PURCHASE ORDER

PASTOR SINGAPORE PTE. LTD.
110, Fifth Chin Bee Road
Singapore 619702
Tel: 68878100
Fax: 68878101
Attention: Mr Sahara

No: 317030

Date: 9/3/2018

Currency: SGD
Delivery: ASAP
Terms: COD

Item	Quantity	Description	Unit Price	Total Price
1	10	T5F.L, DN15 5.015.F.L.K	\$ 101,31	\$ 1 013,10
2	4	T5F.L, DN25 5.025.F.L.K	\$ 153,04	\$ 612,16
3	2	T5F.L, DN32 5.032.F.L.K	\$ 172,97	\$ 345,94
4	10	T6F.L, DN15 6.015.F.L.K	\$ 96,55	\$ 965,50
5	4	T6F.L, DN25 6.025.F.L.K	\$ 142,87	\$ 571,48
6	2	T6F.L, DN32 6.032.F.L.K	\$ 157,46	\$ 314,92
7	3	T38V.E, DN15 38.015.V.E	\$ 210,80	\$ 632,40

Delivery address:

REFITECH Fridge Services Pte. Ltd.
Blk 311, Ubi Yam Road 5,
1-11, UbiYamplex 1,
Singapore 408663
Tel: 67430000, Fax: 67430001

Subtotal: \$ 4 455,50

GST 7%: \$ 311,89

Grand Total : \$ 4 767,39

Remarks:

Jeffrey Boh

Authorized Signature

*Please send us your order acknowledgement upon receipt of this P.O.

www.refitech.com.sg

Documents d'entreprise

REFITECH FRIDGE SERVICES PTE. LTD. (GST No.: 888803566G)		PURCHASE ORDER		
PASTOR SINGAPORE PTE. LTD. 110, Fifth Chin Bee Road Singapore 619702 Tel: 68878100 Fax: 68878101 Attention: Mr Sahara		No: 317030 Date: 9/3/2018 Currency: SGD Delivery: ASAP Terms: COD		
Item	Quantity	Description	Unit Price	Total Price
1	10	T5F.L, DN15 5.015.F.L.K	\$ 101,31	\$ 1 013,10
2	4	T5F.L, DN25 5.025.F.L.K	\$ 153,04	\$ 612,16
3	2	T5F.L, DN32 5.032.F.L.K	\$ 172,97	\$ 345,94
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Delivery address: REFITECH Fridge Services Pte. Ltd. Blk 311, Ubi Yam Road 5, # 1-11, UbiYamplex 1, Singapore 408663 Tel: 67430000, Fax: 67430001			Subtotal: \$ 4 455,50 GST 7%: \$ 311,89 Grand Total : \$ 4 767,39	
Remarks:			Jeffrey Boh Authorized Signature	
*Please send us your order acknowledgement upon receipt of this P.O.				

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Documents d'entreprise - formulaire

Customer Information

* Number 1671 ...
Name Computer Club Market ...
Street 1 1 345 Congress Street
Postal code 02210
City Boston
Region MA
Country US
Contact

Send order confirmation ☐

Order Details

* PO number CCMU07630
PO date 5/28/2021 
Req delivery date 6/28/2021  ?
Total 272.09
Computed total

Items

Delete all lines

Line 1 - 4 / 4

Line #	* Extr. material	* ERP material	Description	* Quantity	* UoM	Total	Req delivery date
	THX-63972D	THX-63972D	Black bulk toner for model 6397	1.00	PC	56.99	
	THX-63971D	THX-63971D	YELLOW bulk toner for model 6397	1.00	PC	71.70	
	THX-63973D	THX-63973D	CYAN bulk toner for model 6397	1.00	PC	71.70	
	THX-63974D	THX-63974D	MAGENTA bulk toner for model 6397	1.00	PC	71.70	

Line 1 - 4 / 4

Shipping Address

* Number 1671 ...
Name Computer Club Market ...
Street 1 1 345 Congress Street
Postal code 02210
City Boston
Region MA
Country US
Drop-ship ☐

General Information

Order type Standard
Priority Urgent
Received via Email
Change order ☐

REFITECH FRIDGE SERVICES PTE. LTD.
(GST No.: 88803568G)

PURCHASE ORDER

PASTOR SINGAPORE PTE. LTD.
110, Fifth Chin Bee Road
Singapore 619702
Tel: 68878100
Fax: 68878101
Attention: Mr Sahara

No: 317030
Date: 9/3/2018
Currency: SGD
Delivery: ASAP
Terms: COD

Item	Quantity	Description	Unit Price	Total Price
1	10	T5F.L, DN15 5.015.F.L.K	\$ 101,31	\$ 1 013,10
2	4	T5F.L, DN25 5.025.F.L.K	\$ 153,04	\$ 612,16
3	2	T5F.L, DN32 5.032.F.L.K	\$ 172,97	\$ 345,94
4	10	T6F.L, DN15 6.015.F.L.K	\$ 96,55	\$ 965,50
5	4	T6F.L, DN25 6.025.F.L.K	\$ 142,87	\$ 571,48
6	2	T6F.L, DN32 6.032.F.L.K	\$ 157,46	\$ 314,92
7	3	T38V.E, DN15 38.015.V.E	\$ 210,80	\$ 632,40

Delivery address:
REFITECH Fridge Services Pte. Ltd.
Blk 311, Ubi Yam Road 5,
1-11, UbiYamplex 1,
Singapore 408663
Tel: 67430000, Fax: 67430001

Subtotal: \$ 4 455,50
GST 7%: \$ 311,89
Grand Total: \$ 4 767,39

Remarks:

Jeffrey Boh
Authorized Signature

*Please send us your order acknowledgement upon receipt of this P.O.

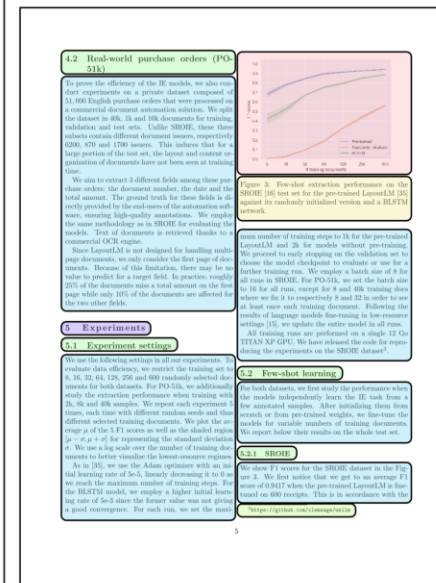
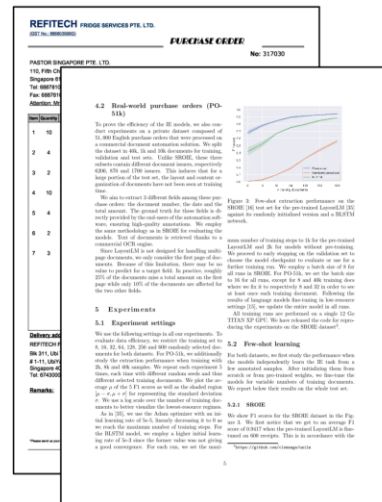
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Applications courantes - classification

The collage displays a variety of professional documents:

- Resumes:** Two resumes are shown. One for 'Thibault Douzon' in 'Information Systems' with contact details and a list of experiences. The other is for 'tan chay yee' with contact information and a list of experiences.
- Purchase Orders:** Two identical 'REPTECH PRODUCE SERVICES PTE. LTD.' purchase orders for 'FERRISIAN CEREAL' are shown. Each order is for 100 units of 'KINGS SAFETY SHOTS KING 800' at a price of \$193.00. The orders include a list of items, a tax invoice, and a total amount of \$193.00.
- Letters:** A letter from 'Thibault Douzon' dated 10/05/2023, addressed to 'Thibault Douzon', is shown. The letter discusses a meeting on 05/05/2023 and mentions a meeting on 10/05/2023.

Applications courantes - segmentation



Applications courantes – extraction d'information

REFITECH FRIDGE SERVICES PTE. LTD.
(GST No.: 888803566G)

PURCHASE ORDER

PASTOR SINGAPORE PTE. LTD.
110, Fifth Chin Bee Road
Singapore 619702
Tel: 68878100
Fax: 68878101
Attention: Mr. Sahara

No: 317030
Date: 9/3/2018
Currency: SGD
Delivery: ASAP
Terms: COD

Item	Quantity	Description	Unit Price	Total Price
1	10	T5F.L, DN15 S.015.F.L.K	\$ 101.31	\$ 1 013.10
2	4	T5F.L, DN25 S.025.F.L.K	\$ 153.04	\$ 612.16
3	2	T5F.L, DN32 S.032.F.L.K	\$ 172.97	\$ 345.94
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5	4	T6F.L, DN25 S.025.F.L.K	\$ 142.87	\$ 571.48
6	2	T6F.L, DN32 S.032.F.L.K	\$ 157.40	\$ 314.80
7	3	T38V.E, DN15 S8.015.V.E	\$ 210.80	\$ 632.40

Delivery address:
REFITECH Fridge Services Pte. Ltd.
Blk 311, Ubi Yam Road 5,
1-11, UbiYamplex 1,
Singapore 408663
Tel: 67430000, Fax: 67430001

Subtotal: \$ 4 455.50
GST 7%: \$ 311.89
Grand Total: \$ 4 767.39

Remarks: Jeffrey Boh
Authorized Signature

*Please send us your order acknowledgement upon receipt of this P.O.

www.reftech.com.sg



REFITECH FRIDGE SERVICES PTE. LTD.
(GST No.: 888803566G)

PURCHASE ORDER

PASTOR SINGAPORE PTE. LTD.
110, Fifth Chin Bee Road
Singapore 619702
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www.reftech.com.sg

Applications courantes – question / réponse

REFITECH FRIDGE SERVICES PTE. LTD.
(GST No.: 888803566G)

PURCHASE ORDER

PASTOR SINGAPORE PTE. LTD.
110, Fifth Chin Bee Road
Singapore 619702
Tel: 68878100
Fax: 68878101
Attention: Mr. Sahara

No: 317030
Date: 9/3/2018
Currency: SGD
Delivery: ASAP
Terms: COD

Item	Quantity	Description	Unit Price	Total Price
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REFITECH Fridge Services Pte. Ltd.
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Tel: 67430000, Fax: 67430001

Subtotal: \$ 4 455,50
GST 7%: \$ 311,89
Grand Total: \$ 4 767,39

Remarks: Jeffrey Boh
Authorized Signature

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Q: « How many items
were bought? »

REFITECH FRIDGE SERVICES PTE. LTD.
(GST No.: 888803566G)

PURCHASE ORDER

PASTOR SINGAPORE PTE. LTD.
110, Fifth Chin Bee Road
Singapore 619702
Tel: 68878100
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Attention: Mr. Sahara

No: 317030
Date: 9/3/2018
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Delivery address:
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Grand Total: \$ 4 767,39

Remarks: Jeffrey Boh
Authorized Signature

*Please send us your order acknowledgement upon receipt of this P.O.

www.refitech.com.sg

A: « 35 »

Applications courantes

Customer Information

• **Number** 1671 ...
Name Computer Club Market ...
Street 1 1 345 Congress Street
Postal code 02210
City Boston
Region MA
Country US
Contact
Send order confirmation ☐

Shipping Address

• **Number** 1671 ...
Name Computer Club Market ...
Street 1 1 345 Congress Street
Postal code 02210
City Boston
Region MA
Country US
Drop-ship ☐

Order Details

• **PO number** CCMU07630
PO date 5/28/2021
Req delivery date 6/28/2021 ?
Total 272.09
Computed total

General Information

Order type Standard ▼
Priority Urgent ▼
Received via Email
Change order ☐

Items

Delete all lines

Line 1 - 4 / 4

Line #	Extr. material	ERP material	Description	Quantity	UoM	Total	Req delivery date
	THX-63972D	THX-63972D	Black bulk toner for model 6397	1.00	PC	56.99	
	THX-63971D	THX-63971D	YELLOW bulk toner for model 6397	1.00	PC	71.70	
	THX-63973D	THX-63973D	CYAN bulk toner for model 6397	1.00	PC	71.70	
	THX-63974D	THX-63974D	MAGENTA bulk toner for model 6397	1.00	PC	71.70	

Line 1 - 4 / 4

2

D'ingénieur à Docteur

Mon parcours



 2019 : PFE chez Esker

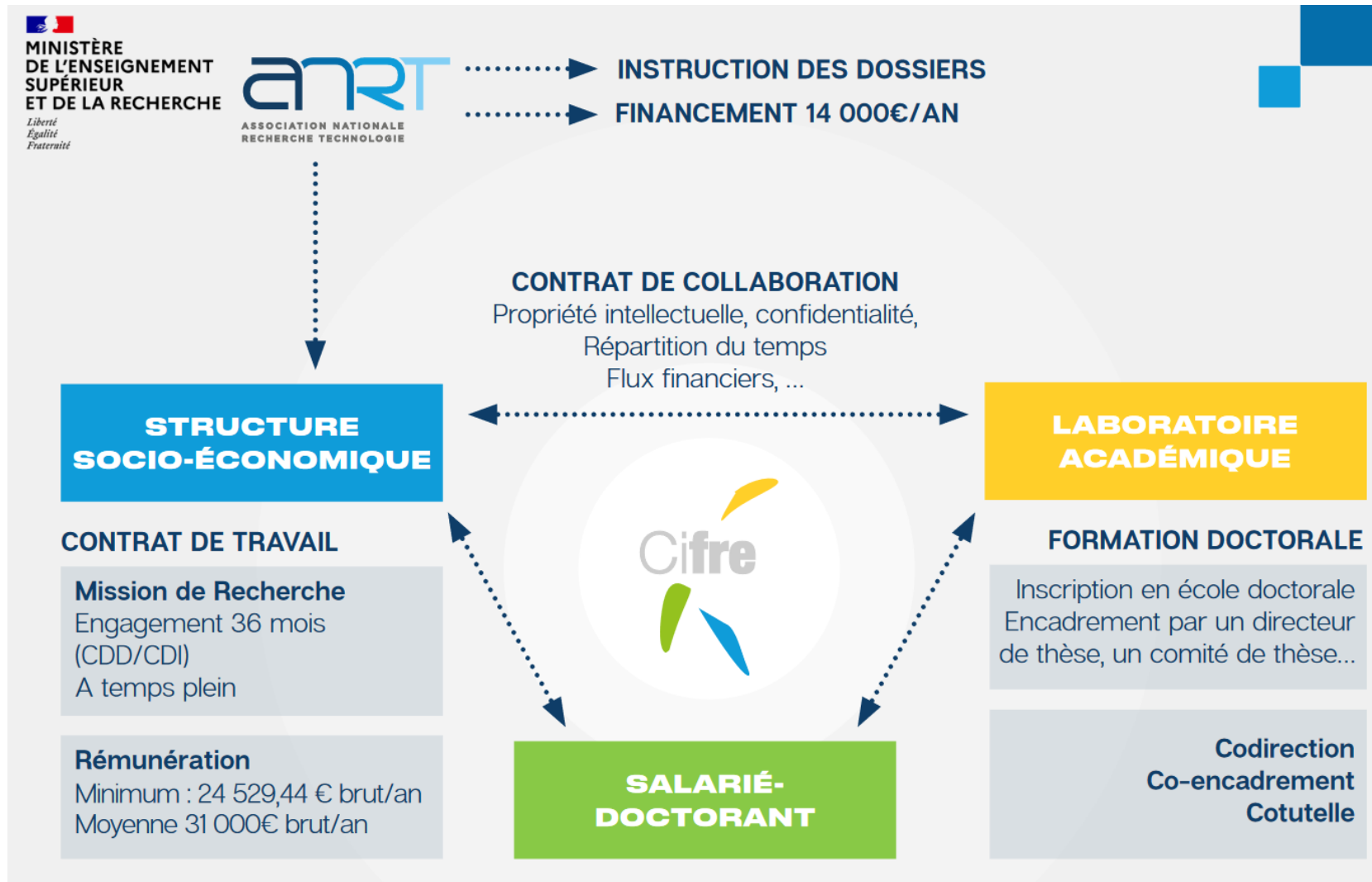


 2020 – 2023 : Thèse CIFRE LIRIS / INSA / Esker

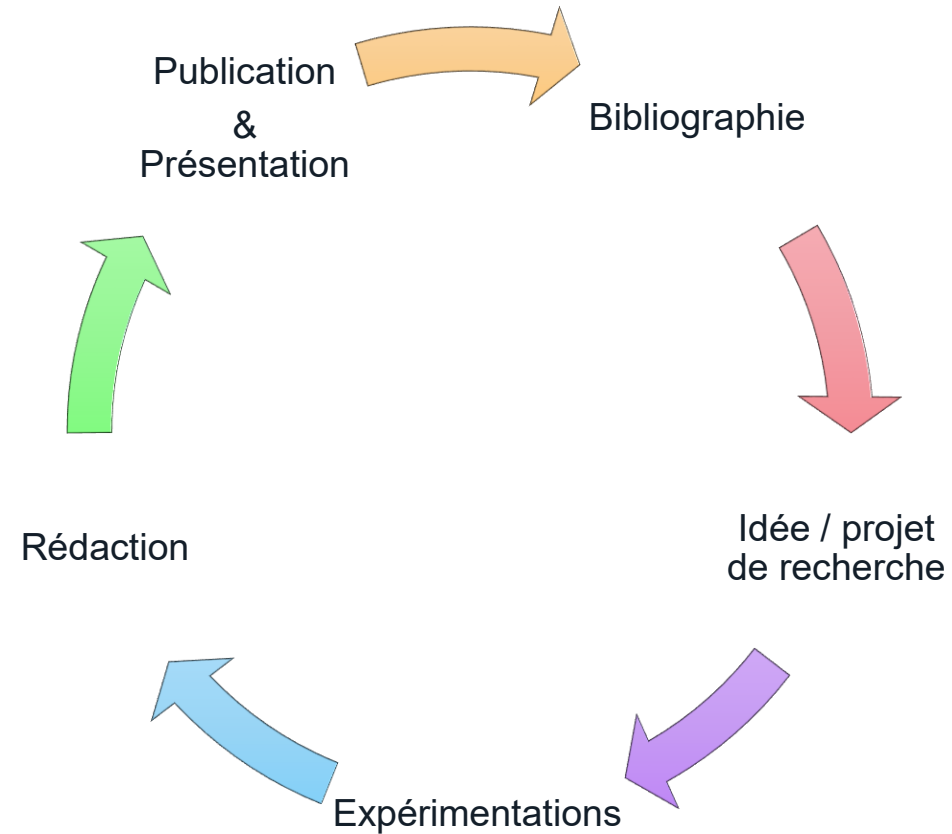


 2023 - ? : Ingénieur ML chez Esker

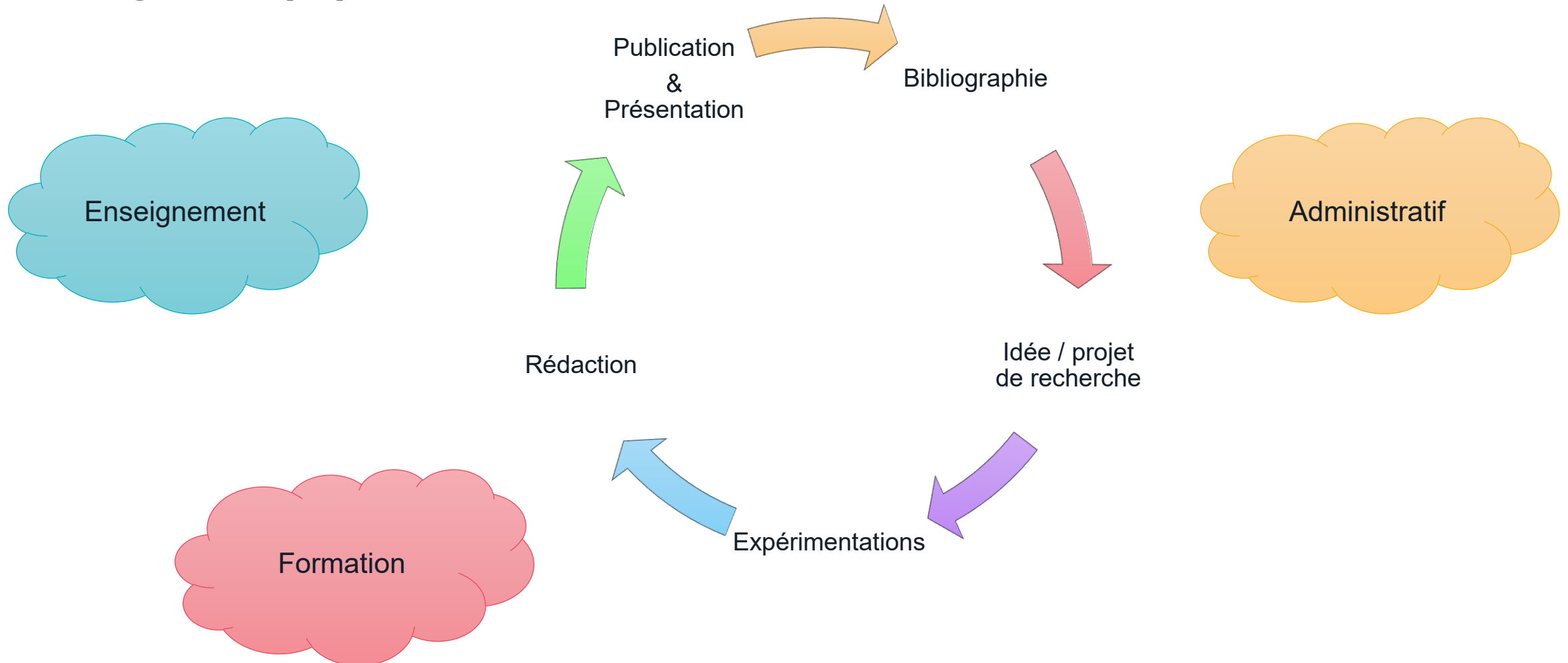
Dispositif CIFRE



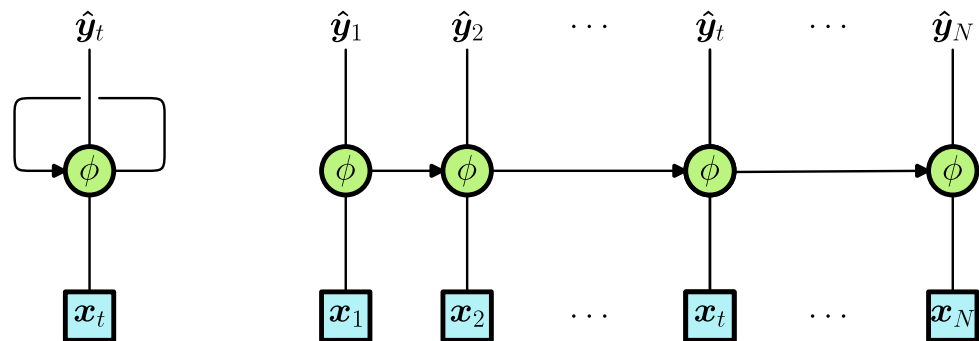
Cycle de recherche



Cycle (?) de recherche



Évolution du sujet de thèse



Réseau récurrent pour le traitement de texte

REFITECH FRIDGE SERVICES PTE. LTD.
(GST.No.: 888803586G)

PURCHASE ORDER

PASTOR SINGAPORE PTE. LTD.
110, Fifth Chin Bee Road
Singapore 619702
Tel: 68878100
Fax: 68878101
Attention: Mr Sahara

No: 317030
Date: 9/3/2018
Currency: SGD
Delivery: ASAP
Terms: COD

Item	Quantity	Description	Unit Price	Total Price
1	10	TSF.L, DN15 5.015.F.L.K	\$ 101,31	\$ 1 013,10
2	4	TSF.L, DN25 5.025.F.L.K	\$ 153,04	\$ 612,16
3	2	TSF.L, DN32 5.032.F.L.K	\$ 172,97	\$ 345,94
4	10	T6F.L, DN15 6.015.F.L.K	\$ 96,55	\$ 965,50
5	4	T6F.L, DN25 6.025.F.L.K	\$ 142,87	\$ 571,48
6	2	T6F.L, DN32 6.032.F.L.K	\$ 157,48	\$ 314,92
7	3	T38V.E, DN15 38.015.V.E	\$ 210,80	\$ 632,40

Delivery address:
REFITECH Fridge Services Pte. Ltd.
Blk 311, Ubi Yam Road 5,
1-11, UbiYamplex 1,
Singapore 408663
Tel: 67430000, Fax: 67430001

Subtotal: \$ 4 455,50
GST 7%: \$ 311,89
Grand Total: \$ 4 767,39

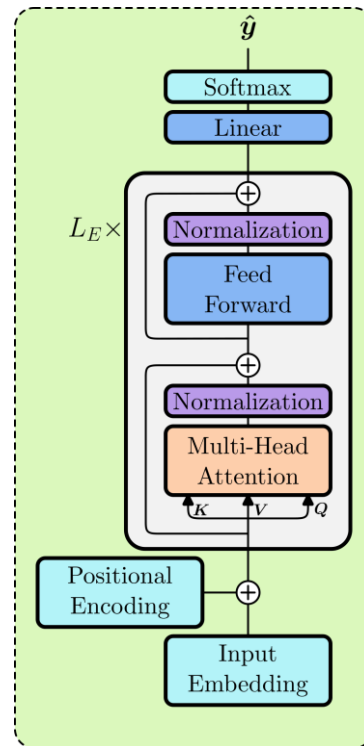
Remarks:

Jeffrey Boh
Authorized Signature

*Please send us your order acknowledgement upon receipt of this P.O.

www.refitech.com.sg

Évolution du sujet de thèse



Architecture Transformer, proposée en 2017

REFITECH FRIDGE SERVICES PTE. LTD.
(GST No.: 888803566G)

PURCHASE ORDER

PASTOR SINGAPORE PTE. LTD.
110, Fifth Chin Bee Road
Singapore 619702
Tel: 68878100
Fax: 68878101
Attention: Mr. Sahara

No: 317030

Date: 9/3/2018

Currency: SGD
Delivery: ASAP
Terms: COD

Item	Quantity	Description	Unit Price	Total Price
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Grand Total: \$ 4 767,39

Remarks:

Jeffrey Boh

Authorized Signature

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Mes axes de recherche

Data Efficiency

- Quelle quantité de données nécessaire pour une certaine performance ?
- Quelles méthodes pour mieux entraîner ?

Pre-Training

- Comment adapter le pré-entraînement aux documents ?
- Quelles spécificités des documents ?

Long Context

- Comment travailler sur de longs documents ?
- Équilibre performance / longueur de contexte ?

REFITECH FRIDGE SERVICES PTE. LTD. (GST No.: 888803566G) PURCHASE ORDER				
PASTOR SINGAPORE PTE. LTD. 110, Fifth Chin Bee Road Singapore 619702 Tel: 68878100 Fax: 68878101 Attention: Mr Sahara			No: 317030 Date: 9/3/2018 Currency: SGD Delivery: ASAP Terms: COD	
Item	Quantity	Description	Unit Price	Total Price
1	10	T5F.L, DN15 5.015.F.L.K	\$ 101,31	\$ 1 013,10
2	4	T5F.L, DN25 5.025.F.L.K	\$ 153,04	\$ 612,16
3	2	T5F.L, DN32 5.032.F.L.K	\$ 172,97	\$ 345,94
4	10	T6F.L, DN15 6.015.F.L.K	\$ 96,55	\$ 965,50
5	4	T6F.L, DN25 6.025.F.L.K	\$ 142,87	\$ 571,48

Figure 6: Raw document, unstructured business document image

REFITECH

FRIDGE SERVICES PTE. LTD.

(GST No.: 888803566G)

PURCHASE ORDER

PASTOR SINGAPORE PTE. LTD.

110 Fifth Chin Bee Road

Singapore 619702

Tel: 68878100

Fax: 68878101

Attention: Mr Sahara

No: 317030

Date: 9/3/2018

Currency: SGD

Delivery: ASAP

Terms: COD

Item	Quantity	Description	Unit Price	Total Price
1	10	T5F DN15 5.015 F.L.K	\$ 101,31	\$ 1 013,10
2	4	T5F DN25 5.025 F.L.K	\$ 153,04	\$ 612,16
3	2	T5F DN32 5.032 F.L.K	\$ 172,97	\$ 345,94
4	10	T6F DN15 6.015 F.L.K	\$ 96,55	\$ 965,50
5	4	T6F DN25 6.025 F.L.K	\$ 142,87	\$ 571,48

Figure 7: Many numeric values are represented

REFITECH FRIDGE SERVICES PTE. LTD.
(GST No. 899630295)

PURCHASE ORDER

No: 317030

PASTOR SINGAPORE PTE. LTD.
110, PNB Chir-Bee Road
Singapore 619702
Tel: 68678100
Fax: 68678101
Attention: Mr. Sahana

Date: 9/3/2018

Currency: SGD
Delivery: ASAP
Terms: COD

Item	Quantity	Description	Unit Price	Total Price
1	10	TSP_L DN15 S.015.F.L.K	\$ 101,31	\$ 1 013,10
2	4	TSP_L DN25 S.025.F.L.K	\$ 153,04	\$ 612,16
3	2	TSP_L DN32 S.032.F.L.K	\$ 172,97	\$ 345,94
4	10	TSP_L DN15 S.015.F.L.K	\$ 96,55	\$ 965,50
5	4	TSP_L DN25 S.025.F.L.K	\$ 142,87	\$ 571,48
6	2	TSP_L DN32 S.032.F.L.K	\$ 157,48	\$ 314,92
7	3	T3BV.E, DN15 38.015.V.E	\$ 210,80	\$ 632,40

Delivery address:
REFITECH Fridge Services Pte. Ltd.
Blk 311, Ulu Yam Road 5,
1-11, UluYamplex 1,
Singapore 670603
Tel: 67430000, Fax: 67430001

Subtotal \$ 4 455,50
GST 7% \$ 311,89
Grand Total \$ 4 767,39

Remarks:

Jeffrey Boh
Authorized Signature

*Please send us your order acknowledgment upon receipt of the P.O.

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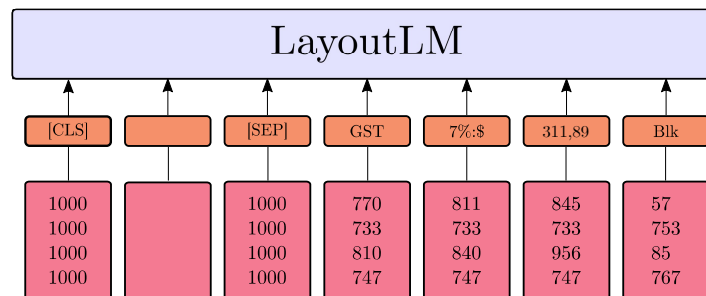


Figure 8: Token representation of a document

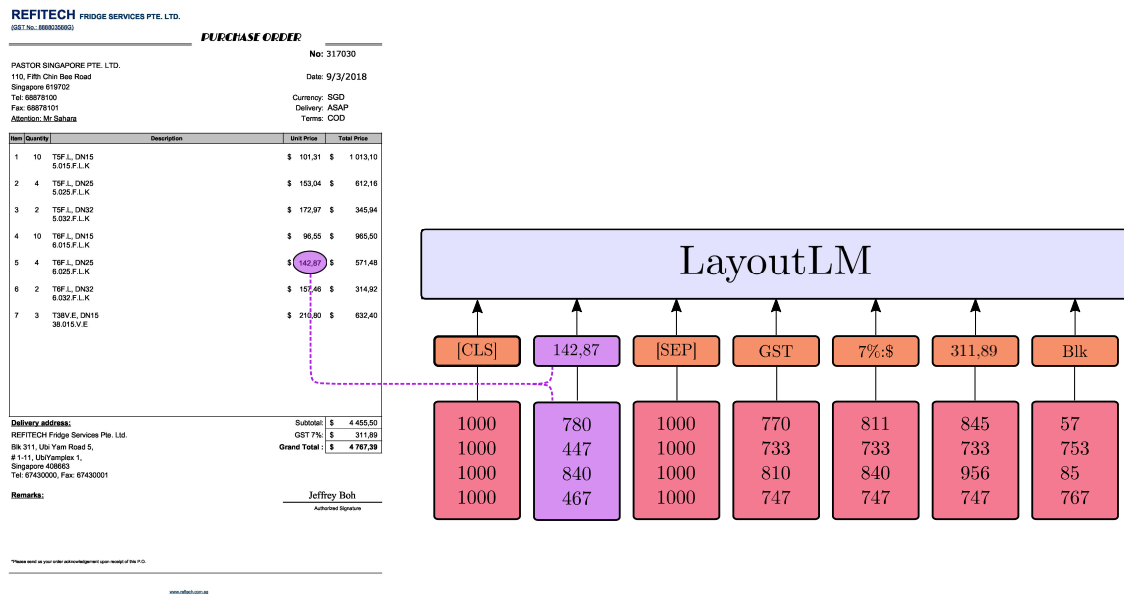


Figure 9: Select a random numeric value in the document

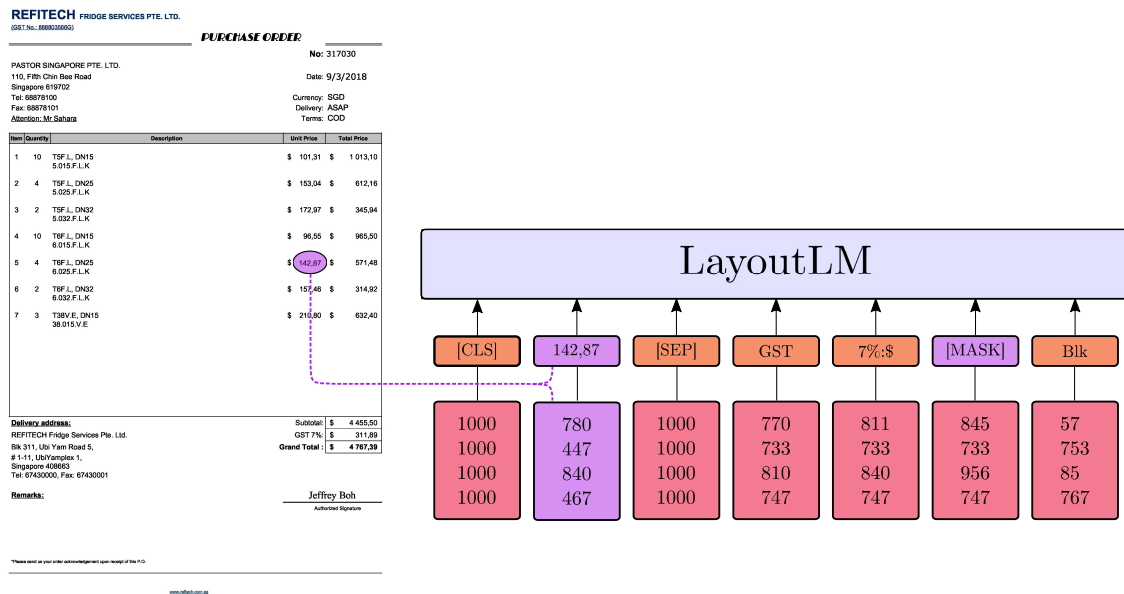


Figure 10: Mask some representations randomly in the sequence

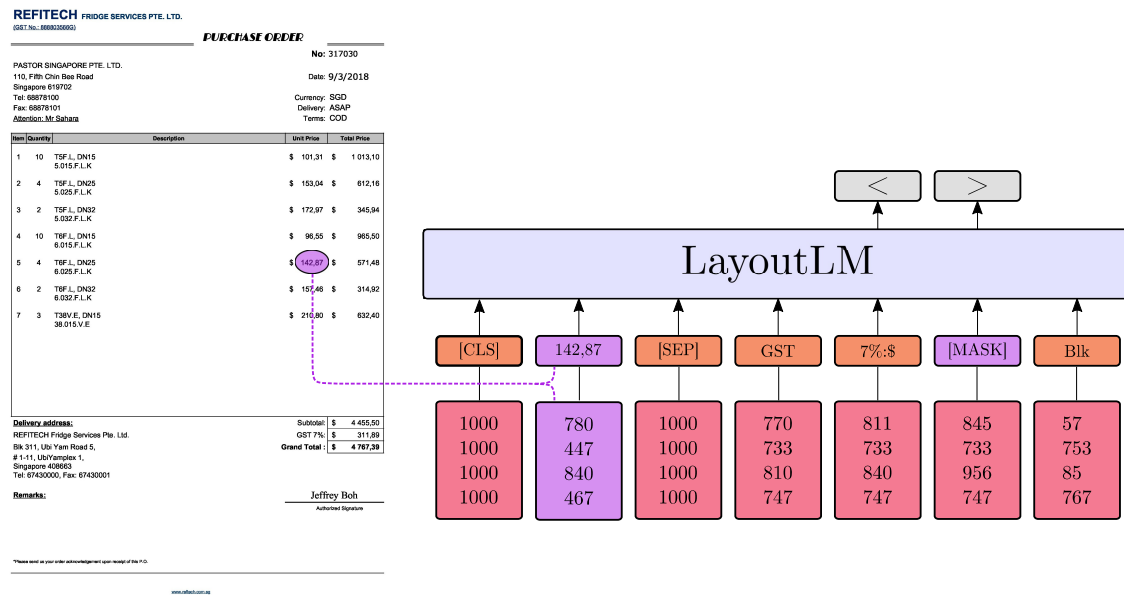


Figure 11: Ask the model to predict for all numeric token their relative value compared to the selected one

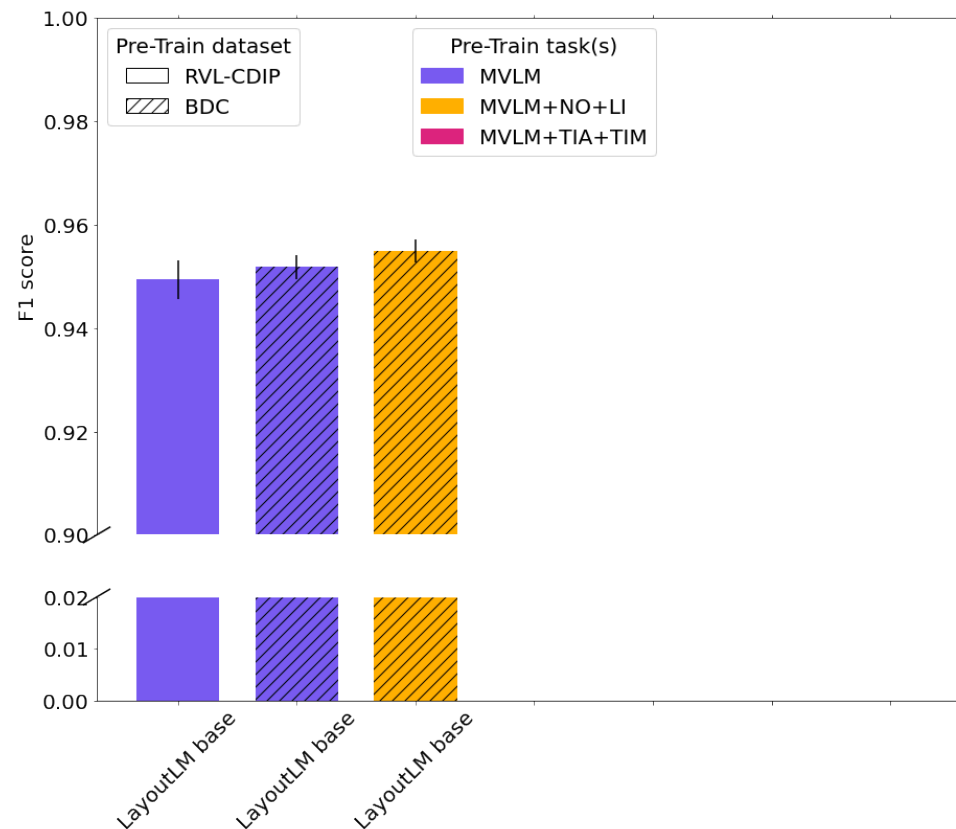


Figure 12: Specific pre-training tasks improve performance on document understanding tasks

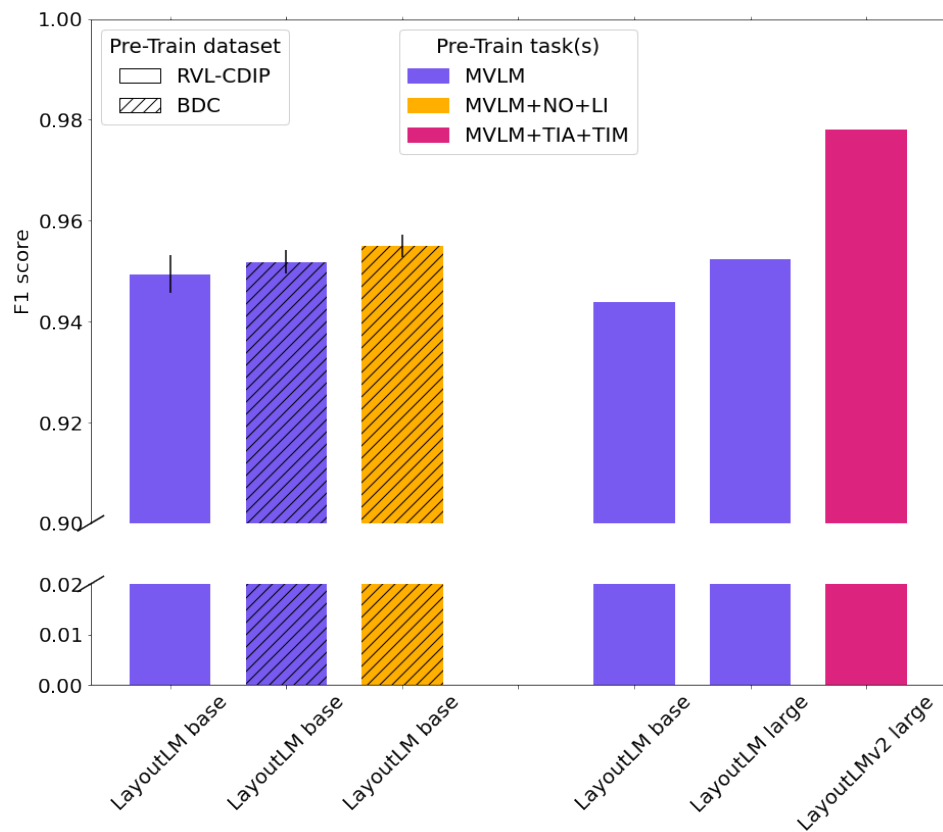


Figure 13: Up to the performance of a model $3\times$ larger

Publication de la recherche



Publication de la recherche

 Cornell University

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Computer Science > Computation and Language

[Submitted on 12 Jun 2017 (v1), last revised 2 Aug 2023 (this version, v7)]

Attention Is All You Need

Ashish Vaswani, Noam Shazeer, Niki Parmar, Jakob Uszkoreit, Llion Jones, Aidan N. Gomez, Lukasz Kaiser, Illia Polosukhin

The dominant sequence transduction models are based on complex recurrent or convolutional neural networks in an encoder-decoder configuration. The best performing models also connect the encoder and decoder through an attention mechanism. We propose a new simple network architecture, the Transformer, based solely on attention mechanisms, dispensing with recurrence and convolutions entirely. Experiments on two machine translation tasks show these models to be superior in quality while being more parallelizable and requiring significantly less time to train. Our model achieves 28.4 BLEU on the WMT 2014 English-to-German translation task, improving over the existing best results, including ensembles by over 2 BLEU. On the WMT 2014 English-to-French translation task, our model establishes a new single-model state-of-the-art BLEU score of 41.8 after training for 3.5 days on eight GPUs, a small fraction of the training costs of the best models from the literature. We show that the Transformer generalizes well to other tasks by applying it successfully to English constituency parsing both with large and limited training data.

Comments: 15 pages, 5 figures

Subjects: [Computation and Language \(cs.CL\)](#); [Machine Learning \(cs.LG\)](#)

Cite as: [arXiv:1706.03762 \[cs.CL\]](#)
(or [arXiv:1706.03762v7 \[cs.CL\]](#) for this version)
<https://doi.org/10.48550/arXiv.1706.03762>

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[v5] Wed, 6 Dec 2017 03:30:32 UTC (1,124 KB)

[v6] Mon, 24 Jul 2023 00:48:54 UTC (1,124 KB)

[v7] Wed, 2 Aug 2023 00:41:18 UTC (1,124 KB)

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3

Et ensuite ?

Le doctorat : un diplôme, des compétences

Expertise

Communication

Méthode
scientifique

Gestion de
projet

Rédaction

Vulgarisation

Assimilation de
connaissances

Rigueur

Organisation

**Merci pour
votre attention**



Thibault Douzon

thibault.douzon@esker.com