

## Detecting Multi - timescale Consumption Patterns from Receipt Data — RAG Optimized Summary

1.

- ( ) ,
- :
- ( . . . ) 가?
- 가? 가?
- 가? 가?

2.

- ( . . . . . ) ,  
(NTF)

3. : Non - Negative Tensor Factorization (NTF)

- :  $\times$   $\times$  (3 )
- $x(i,j,k)$ : i k j
- PARAFAC NTF (intra - week) . (inter - week)

4.

- : /
- : + ,

5.

- Dr.Wallet (2017.4.1 ~ 2018.1.21)
- 2,796,008
- 2,624

- : , , ,

6.

- (1) (Intra - week)

- 
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-

(2) (Inter - week)

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-

:

7.

NTF A k - medoids 5

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, , .

8. RAG

- ( + )

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5

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