# METHODS AND SYSTEMS FOR ORDER PROCESSING

## CROSS-REFERENCE TO RELATED APPLICATIONS

**[0001]** The application claims priority to:

**[0002]** Chinese Patent Application No. CN201510053500.6, filed Feb. 2, 2015;

**[0003]** Chinese Patent Application No. CN201510065334.1, filed Feb. 6, 2015;

**[0004]** Chinese Patent Application No. CN201510075815.0, filed Feb. 12, 2015;

**[0005]** Chinese Patent Application No. CN201510149155.6, filed Mar. 31, 2015;

**[0006]** Chinese Patent Application No. CN201510174117.6, filed Apr. 13, 2015;

**[0007]** Chinese Patent Application No. CN201510207953.X, filed Apr. 28, 2015;

**[0008]** Chinese Patent Application No. CN201510633919.9, filed Sep. 29, 2015;

**[0009]** Chinese Patent Application No. CN201610035351.5, filed Jan. 19, 2016; and

**[0010]** The entire contents of which are hereby incorporated by reference.

## TECHNICAL FIELD

**[0011]** The present disclosure relates to methods and systems for order processing, and in particular, to methods and systems for order processing applying mobile internet techniques and data processing techniques.

## BACKGROUND

**[0012]** Currently, the application of on-demand services is becoming more and more popular. Taking a transportation service as an example, an on-demand service system may allocate an order to drivers and may selectively send the order to one of the drivers who responded to the order. In order to increase response rates and completion rates of the drivers, it is necessary to match the order information with habits or preferences of the drivers quickly and push preferential orders to the drivers accurately and flexibly.

**[0012a]**According to a first aspect of the present disclosure, there is provided a system, comprising: at least one storage medium including a set of instructions for order processing; and logic circuits connected to the at least one storage medium, wherein during operation, the logic circuits load the set of instructions and: obtain

electronic signals from a bus, the electronic signals encoding orders; extract order information based on the orders; extract service provider information; obtain features of service providers; determine a result as to whether the order information matches the features of the service providers or whether the features of the service providers satisfy a preset condition; rank the service providers based on the result; generate orders to be allocated; and send out electronic signals encoding the orders to be allocated to the service providers based on the ranking.

**[0012b]** According to a second aspect of the present disclosure, there is provided a method for order processing, comprising: receiving, by at least one processor, orders; extracting, by the at least one processor, order information based on the orders; extracting, by the at least one processor, service provider information; obtaining, by the at least one processor, features of service providers; determining, by the at least one processor, a result as to whether the order information matches the features of the service providers or whether the features of the service providers satisfy a preset condition; ranking, by the at least one processor, the service providers based on the result; generating, by the at least one processor, orders to be allocated; and allocating, by the at least one processor, the orders to be allocated to the service providers based on the ranking.

## SUMMARY

**[0013]** According to some examples of the present disclosure, an order processing method is provided. The processing method may include: receiving orders and extracting order information; extracting service provider information and obtaining

features of service providers; determining whether the order information matches the features of the service providers, or determining whether the features of the service providers satisfy a preset condition to generate a determination result; ranking the service providers based on the determination result; generating orders to be allocated; and allocating the orders to be allocated to the service providers based on the ranking.

**[0014]** According to some examples of the present disclosure, a system is provided. The system may include: a computer-readable memory medium configured for storing an executable module and a processor configured to perform the executable module. The executable module may include: an order extraction module configured to receive orders and to extract order information; a service provider information extraction module configured to extract service provider information and to obtain features of service providers; a determination module configured to determine whether the order information matches the features of the service providers, or determine whether the features of the service providers satisfy a preset condition to generate a determination result; a ranking module configured to rank the service providers based on the determination result; an order generation module configured to generate orders to be allocated; an order allocation module configured to allocate the orders to be allocated to the service providers based on the ranking.

**[0015]** According to some examples of the present disclosure, a computer-readable memory medium is provided. The computer-readable memory medium is configured for storing an executable module and storing information. When the information is read by the computer, the information may cause the computer to perform an order processing method. The order processing method may include: receiving orders and extracting order information; extracting service provider information and obtaining features of service providers; determining whether the order information matches the features of the service providers, or determining whether the features of the

**WE CLAIM:**

1. A system, comprising:

at least one storage medium including a set of instructions for order processing; and

logic circuits connected to the at least one storage medium, wherein during operation, the logic circuits load the set of instructions and:

obtain electronic signals from a bus, the electronic signals encoding orders;

extract order information based on the orders;

extract service provider information;

obtain features of service providers;

determine a result as to whether the order information matches the features of the service providers or whether the features of the service providers satisfy a preset condition;

rank the service providers based on the result;

generate orders to be allocated; and

send out electronic signals encoding the orders to be allocated to the service providers based on the ranking.

2. The system of claim 1, wherein the order information includes a time point, a

time interval, a location, and a region.

3. The system of claim 1, wherein the features of the service providers includes an order similarity, a preference rate, a failure rate, characteristics of responding to orders, and a response time.

4. The system of claim 3, wherein the order similarity includes a cosine similarity between a historical order and a current order.

5. The system of claim 3, wherein the preference rate includes a preferential region and a preferential time interval.

6. The system of claim 3, wherein the logic circuits further:

obtain the preference rate from the service provider or determine the preference rate by the at least one processor.

7. The system of claim 3, wherein the logic circuits further:

send out electronic signals to access the at least one storage medium to obtain a longitude-latitude coordinate point corresponding to a destination of the order to be allocated;

determine a distance *Az* between the longitude-latitude coordinate point of the destination of the order to be allocated and a center of a preferential destination region of the service provider;

determine a preference rate *L* of the service provider for the destination of the order to be allocated based on the distance *Az* and a covering radius d of the preferential destination region of the service provider, wherein: $L=\sum 1/\left(1+e^{A_z-d}\right)$.

8. The system of claim 3, wherein to obtain the failure rate, the logic circuits further:

determine the failure rate with a formula as:

$$T_x = \sum_{i=0}^{k} C_n^k * p^k * (1-p)^{n-k},$$

wherein *Tx* represents the failure rate, *k* represents a number of orders that the service provider x has failed to complete among *n* orders allocated to the service provider, $C_n^k$ represents a number of combinations of selecting *k* from *n*, *p* represents an average failure rate.

9. The system of claim 3, wherein the logic circuits further:

determine candidate requests from the service providers based on the response times; and

select one request for processing from the candidate requests.

10. The system of claim 1, wherein the logic circuits further:

determine a geographic region;

determine an order group and a service provider group based on the geographic region;

analyze the order group and the service provider group to determine a completion rate, a success rate for responding to orders, and a receiving-responding rate for orders;

determine a weighted sum of the completion rate, the success rate for responding to orders, and the receiving-responding rate for orders; and

determine a mode for allocating orders based on the weighted sum.

11. A method for order processing, comprising:

receiving, by at least one processor, orders;

extracting, by the at least one processor, order information based on the orders;

extracting, by the at least one processor, service provider information;

obtaining, by the at least one processor, features of service providers;

determining, by the at least one processor, a result as to whether the order information matches the features of the service providers or whether the features of the service providers satisfy a preset condition;

ranking, by the at least one processor, the service providers based on the result;

generating, by the at least one processor, orders to be allocated; and

allocating, by the at least one processor, the orders to be allocated to the service providers based on the ranking.

12. The method for order processing of claim 11, wherein the order information includes a time point, a time interval, a location, and a region.

13. The method for order processing of claim 11, wherein the features of the service providers include an order similarity, a preference rate, a failure rate, characteristics of responding to orders, and a response time.

14. The method for order processing of claim 13, wherein the order similarity includes a cosine similarity between a historical order and a current order.

15. The method for order processing of claim 13, wherein the preference rate includes a preferential region and a preferential time interval.

16. The method for order processing of claim 13, further comprising:

obtaining, by the at least one processor, the preference rate from the service

provider; or

determining, by the at least one processor, the preference rate.

17. The method for order processing of claim 13, further comprising:

obtaining, by the at least one processor, a longitude-latitude coordinate point corresponding to a destination of the order to be allocated;

determining, by the at least one processor, a distance *Az* between the longitude-latitude coordinate point of the destination of the order to be allocated and a center of a preferential destination region of the service provider;

determining, by the at least one processor, a preference rate *L* of the service provider for the destination of the order to be allocated based on the distance *Az* and a covering radius *d* of the preferential destination region of the service provider, wherein: $L=\sum 1/\left(1+e^{A_z-d}\right)$.

18. The method for order processing of claim 13, wherein the obtaining of the failure rate includes determining the failure rate with a formula as:

$$T_x = \sum_{i=0}^{k} C_n^k * p^k * (1-p)^{n-k},$$

wherein *Tx* represents the failure rate, *k* represents a number of orders that the service provider x has failed to complete among *n* orders allocated to the service provider, $C_n^k$ represents a number of combinations of selecting *k* from *n*, and *p*

represents an average failure rate.

19. The method for order processing of claim 13, further comprising:

determining, by the at least one processor, candidate requests from the service providers based on the response times; and

selecting, by the at least one processor, one request for processing from the candidate requests.

20. The method for order processing of claim 11, further comprising:

determining, by the at least one processor, a geographic region;

determining, by the at least one processor, an order group and a service provider group based on the geographic region;

analyzing, by the at least one processor, the order group and the service provider group to determine a completion rate, a success rate for responding to orders, and a receiving-responding rate for orders;

determining, by the at least one processor, a weighted sum of the completion rate, the success rate for responding to orders, and the receiving-responding rate for orders; and

determining, by the at least one processor, a mode for allocating orders based on the weighted sum.