CLAIMS

What is claimed is:

1. A data processing method, comprising:
receiving input data transmitted by a central processing unit;
performing a hash join operation on the input data to obtain a target operation result, and using the target operation result as output data; and
transmitting the output data to the central processing unit,
wherein the input data and the output data are columnar data, and the input data and the output data are in the form of an array,
wherein before the receiving input data transmitted by a central processing unit, the method further comprises: connecting to the central processing unit, wherein the central processing unit is configured to obtain the input data, and transmit the input data to an accelerator card,
wherein the accelerator card comprises an accelerator core and a memory, level 1 cache data is stored in the accelerator core, and the input data, the output data, and level 2 cache data are stored in the memory.

2. The method according to claim 1, wherein the performing a hash join operation on the input data to obtain a target operation result comprises:
reading, by the accelerator core, the input data from the memory;
calculating a hash value of the input data and a quantity of the hash values;
establishing a hash table based on the hash value and the quantity of the hash values; and performing the hash join operation on the input data based on the hash table, to obtain the target operation result.

3. The method according to claim 2, wherein the calculating a hash value of the input data and a quantity of the hash values comprises:

calculating the hash value of the input data and the quantity of the hash values based on the input data and a parameter set.

4. The method according to claim 2, wherein the establishing a hash table based on the hash value and the quantity of the hash values comprises:
determining a level 1 cache depth and a level 2 cache depth of the input data based on the hash value and the quantity of the hash values, wherein the level 1 cache depth is a hash bucket corresponding to the level 1 cache data, and the level 2 cache depth is a hash bucket corresponding to the level 2 cache data;
and establishing the hash table based on the hash value, the level 1 cache depth, and the level 2 cache depth.

5. A data processing apparatus, comprising:
a receiving module, configured to receive input data transmitted by a central processing unit; an operation module, configured to perform a hash join operation on the input data to obtain a target operation result, and use the target operation result as output data; and
a transmission module, configured to transmit the output data to the central processing unit,
wherein the input data and the output data are columnar data, and the input data and the output data are in the form of an array.
wherein data processing apparatus further comprises: a connecting module, configured to connect to the central processing unit, wherein the central processing unit is configured to obtain the input data, and transmit the input data to an accelerator card,
wherein the accelerator card comprises an accelerator core and a memory, level 1 cache data is stored in the accelerator core, and the input data, the output data, and level 2 cache data are stored in the memory.

6. The apparatus according to claim 5, wherein the operation module is further configured to: read the input data from the memory by the accelerator core; calculate a hash value of the input data and a quantity of the hash values; establish a hash table based on the hash value and the quantity of the hash values; and perform the hash join operation on the input data based on the hash table, to obtain the target operation result.

7. The apparatus according to claim 6, wherein the operation module is further configured to calculate the hash value of the input data and the quantity of the hash values based on the input data and a parameter set.

8. The apparatus according to claim 6, wherein the operation module is further configured to determine a level 1 cache depth and a level 2 cache depth of the input data based on the hash value and the quantity of the hash values, wherein the level 1 cache depth is a hash bucket corresponding to the level 1 cache data, and the level 2 cache depth is a hash bucket corresponding to the level 2 cache data; and establish the hash table based on the hash value, the level 1 cache depth, and the level 2 cache depth.

9. An electronic device, comprising:
a memory;
a processor; and
a computer program, wherein
the computer program is stored in the memory, and is configured to be executed by the processor to implement the method according to any one of claims 1 to 4.

10. A computer-readable storage medium, on which a computer program is stored, wherein the computer program is executed by a processor to implement the method according to any one of claims 1 to 4.