WE CLAIM:

1. A method for controlling traffic lights of an upstream intersection and a downstream intersection linked by a road, the method comprising:

obtaining, from a server, historical track data of a plurality of vehicles that passed the road, the upstream intersection, and the downstream intersection over a historical period;

obtaining a congestion period;

determining a discharge speed during the congestion period based on a portion of the historical track data, the portion of the historical track data being corresponding to the congestion period;

determining an offset value based on a length of the road, the discharge speed, a cycle length of a first traffic light, a cycle length of a second traffic light, and a time length of a green light of the second traffic light being lit, the first traffic light being at the downstream intersection, the second traffic light being at the upstream intersection, the cycle length of the first traffic light being equal to the cycle length of the second traffic light; and

determining a signal timing of the second traffic light based on the offset value.

2. The method of claim 1, wherein the historical period includes a plurality of workdays.

3. The method of claim 1 or claim 2, wherein the historical track data of the plurality of vehicles includes data of positions of the plurality of vehicles on the road and corresponding time points at which the plurality of vehicles at the positions.

4. The method of claim 3, wherein determining the discharge speed during the congestion period based on a portion of the historical track data corresponding to the congestion period includes:

for each of a plurality of first vehicles that pass through a boundary between the road

and the downstream intersection during the congestion period, determining a relative start time point based on historical track data corresponding to the each of the plurality of first vehicles; and

determining the discharge speed based on the relative start time points of the plurality of first vehicles.

5. The method of claim 4, wherein determining, for each of the plurality of first vehicles, the relative start timing based on the historical track data corresponding to the each of the plurality of first vehicles includes:

obtaining an actual start time point of the each of the plurality of first vehicles that the each of the plurality of first vehicles started to move from a stop condition and across the boundary between the road and the downstream intersection during a period of the green light of the first traffic light being lit;

obtaining a start time point of the period of the green light of the first traffic light being lit; and

determining the relative start time point based on the actual start time point of the each of the plurality of first vehicles and the start time point of the period of the green light of the first traffic light being lit.

6. The method of claim 4 or claim 5, wherein determining the discharge speed based on the relative start time points of the plurality of first vehicles further includes: determining the discharge speed based on the relative start time points of the plurality of first vehicles and corresponding positions of the plurality of first vehicles at the relative time points.

7. The method of any one of claims 1-6, wherein determining the offset value based on the length of the road, the discharge speed, the cycle length of the first traffic light, the cycle length of the second traffic light, and the time length of the green light of the

second traffic light being lit includes:

determining an offset value range based on the length of the road, the discharge speed, the cycle length of the first traffic light, the cycle length of the second traffic light, and the time length of the green light of the second traffic light being lit; and

determining the offset value based on the offset value range.

8. The method of any one of claims 1-7, wherein the length of the road includes a length of the upstream intersection.

9. The method of any one of claims 1-8, wherein determining the signal timing of the second traffic light based on the offset value includes:

controlling the second traffic light to delay for the offset value relative to the first traffic light corresponding to the congestion period.

10. The method of any one of claims 1-8, wherein determining the signal timing of the second traffic light based on the offset value includes:

determining a first time point that the green light of the first traffic light starts to be on for a first time;

determining a second time point based on the first time point and the offset value;

extending a period of a red light of the second traffic light to the second time point; and

lighting the green light of the second traffic light at the second time point.

11. A system for controlling traffic lights of an upstream intersection and a downstream intersection linked by a road, the system comprising:

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

at least one processor configured to communicate with the at least one storage

medium, wherein when executing the set of instructions, the at least one processor is directed to:

obtain historical track data of a plurality of vehicles that passed the road, the upstream intersection, and the downstream intersection over a historical period;

obtain a congestion period;

determine a discharge speed during the congestion period based on a portion of the historical track data, the portion of the historical track data being corresponding to the congestion period;

determine an offset value based on a length of the road, the discharge speed, a cycle length of a first traffic light, a cycle length of a second traffic light, and a time length of a green light of the second traffic light being lit, the first traffic light being at the downstream intersection, the second traffic light being at the upstream intersection, the cycle length of the first traffic light being equal to the cycle length of the second traffic light; and

determine a signal timing of the second traffic light based on the offset value.

12. The system of claim 11, wherein the historical period includes a plurality of workdays.

13. The system of claim 11 or claim 12, wherein the historical track data of the plurality of vehicles includes data of positions of the plurality of vehicles on the road and corresponding time points at which the plurality of vehicles at the positions.

14. The system of claim 13, wherein to determine the discharge speed during the congestion period based on a portion of the historical track data corresponding to the congestion period, the at least one processor is further directed to:

determine, for each of a plurality of first vehicles that pass through a boundary

between the road and the downstream intersection during the congestion period, a relative start time point based on historical track data corresponding to the each of the plurality of first vehicles; and

determine the discharge speed based on the relative start time points of the plurality of first vehicles.

15. The system of claim 14, wherein to determine, for each of the plurality of first vehicles, the relative start timing based on the historical track data corresponding to the each of the plurality of first vehicles, the at least one processor is further directed to:

obtain an actual start time point of the each of the plurality of first vehicles that the each of the plurality of first vehicles started to move from a stop condition and across the boundary between the road and the downstream intersection during a period of the green light of the first traffic light being lit;

obtain a start time point of the period of the green light of the first traffic light being lit; and

determine the relative start time point based on the actual start time point of the each of the plurality of first vehicles and the start time point of the period of the green light of the first traffic light being lit.

16. The system of claim 14 or claim 15, wherein to determine the discharge speed based on the relative start time points of the plurality of first vehicles, the at least one processor is further directed to:

determine the discharge speed based on the relative start time points of the plurality of first vehicles and corresponding positions of the plurality of first vehicles at the relative time points.

17. The system of any one of claims 11-16, wherein to determine the offset value based

on the length of the road, the discharge speed, the cycle length of the first traffic light, the cycle length of the second traffic light, and the time length of the green light of the second traffic light being lit, the at least one processor is further directed to:

determine an offset value range based on the length of the road, the discharge speed, the cycle length of the first traffic light, the cycle length of the second traffic light, and the time length of the green light of the second traffic light being lit; and

determine the offset value based on the offset value range.

18. The system of any one of claims 11-17, wherein the length of the road includes a length of the upstream intersection.

19. The system of any one of claims 11-18, wherein to determine the signal timing of the second traffic light based on the offset value, the at least one processor is further directed to:

control the second traffic light to delay for the offset value relative to the first traffic light corresponding to the congestion period.

20. The system of any one of claims 11-18, wherein to determine the signal timing of the second traffic light based on the offset value, the at least one processor is further directed to:

determine a first time point that the green light of the first traffic light starts to be on for a first time;

determine a second time point based on the first time point and the offset value;

extend a period of a red light of the second traffic light to the second time point; and

light the green light of the second traffic light at the second time point.

21. A non-transitory computer readable medium, comprising at least one set of

instructions for controlling traffic lights of an upstream intersection and a downstream intersection linked by a road, wherein when executed by at least one processor of a computing device, the at least one set of instructions causes the computing device to perform a method, the method comprising:

obtaining, from a server, historical track data of a plurality of vehicles that passed the road, the upstream intersection, and the downstream intersection over a historical period;

obtaining a congestion period;

determining a discharge speed during the congestion period based on a portion of the historical track data, the portion of the historical track data being corresponding to the congestion period;

determining an offset value based on a length of the road, the discharge speed, a cycle length of a first traffic light, a cycle length of a second traffic light, and a time length of a green light of the second traffic light being lit, the first traffic light being at the downstream intersection, the second traffic light being at the upstream intersection, the cycle length of the first traffic light being equal to the cycle length of the second traffic light; and

determining a signal timing of the second traffic light based on the offset value.