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問１

[Claim 1]　A head mounted display device comprising:

an image generation unit configured to generate a first image for displaying a first virtual image, and a second image serving as a viewpoint guidance image for displaying a second virtual image for assisting viewpoint movement of a user to the first virtual image;

an image display unit configured to display the first image and the second image that are generated, and output light for displaying the first image and the second image;

a projection see-through optical unit disposed in front of eyes of the user, the projection see-through optical unit including a first part for projecting, on the eyes of the user, the light for displaying the first image and the second image, and a second part that allows the user to see an actual view therethrough; and

a control unit configured to control the image generation unit.

[Claim 4]　The head mounted display device according to any one of claims 1 to 3, wherein

the second virtual image is displayed near the first virtual image on a virtual image display plane of the first virtual image, and

the second virtual image is a virtual image of a viewpoint guidance object serving as the viewpoint guidance image and varying in at least one of hue, brightness, and a position on the virtual image display plane over time.

[Claim 5]　The head mounted display device according to claim 4, wherein

the viewpoint guidance object varies in the position on the virtual image display plane, and

where a first direction is a frontward direction of the user, a second direction is a right-left direction that is perpendicular to the first direction and along a line connecting right and left eyes of the user, and a third direction is an up-down direction that is perpendicular to the first direction and the second direction and along a vertical line, the control unit moves the second virtual image along a part of an arc that is line-symmetric in the second direction so that a position in the second direction and a position in the third direction of the second virtual image both vary on the virtual image display plane.

問 2

Conventionally, energy charging/discharging systems are known which supply power from a storage battery of an electric vehicle to a home appliance load or charge a storage battery of an electric vehicle from a household commercial power supply.

In a case of charging a storage battery of an electric vehicle from a commercial power supply, such a conventional charging/discharging system performs the charging while converting an AC voltage to a predetermined DC voltage by an electric-vehicle power conditioner provided as residential equipment, that is, converting AC power to DC power. On the other hand, in a case of supplying power from a storage battery of an electric vehicle to a home appliance load, the charging/discharging system supplies power to the home appliance load while converting a DC voltage (DC power) outputted from the storage battery of the electric vehicle, to an AC voltage (AC power) by the electric-vehicle power conditioner. An example of such energy charging/discharging systems having electric-vehicle power conditioners is disclosed in Patent Document 1.

Such an electric-vehicle power conditioner used in

the conventional charging/discharging systems having a function of charging a storage battery of an electric vehicle is configured such that, in a case of executing a discharge operation for performing discharge of a storage battery DC voltage from the storage battery of the electric vehicle, first, a communication process is executed between the electric-vehicle power conditioner and an electric vehicle communication unit, and establishment of the communication process is requirements for starting the discharge operation, for the reason described below. Therefore, in a case where the communication process is not established, execution of the discharge operation is impossible.

The reason why establishment of the communication process is requirements for starting the discharge operation is that applying a voltage to a charge/discharge terminal of the electric vehicle in a state in which the communication process has not been established yet can lead to a dangerous situation in which electric shock or the like occurs.

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(A)

One of problems of the gradient descent method is difficulty in selecting the learning rate. If the learning rate is selected to be low, the accuracy (correct answer rate or error) of the DNN is not readily improved and thus the learning process takes a long time. On the other hand, if the learning rate is selected to be high, progress of the learning at an initial stage is fast and thus the time until a certain degree of accuracy is achieved can be shortened. However, the learning might fail during the process and thus the accuracy might not be improved any longer while remaining greatly reduced (deteriorated) on the contrary.

(A')

(B)

In some cases, during the learning, the accuracy of the DNN is greatly improved initially, and thereafter, is deteriorated gradually. In such a case, it might be possible to avoid the gradual deterioration by reselecting the learning rate.

FIG. 6 illustrates problems of the gradient descent method. The curve of the error E in FIG. 6 is the same as that in FIG. 5, but in the example shown in FIG. 6, the learning rate η is set to be higher than that in FIG. 5, and is constant. In FIG. 6, t indicates the time of a learning cycle, and W at each time t indicates the weight at the time t. The curve of the error E in FIG. 6 has a point (weight W_{min}) at which the error E is minimized and a local minimum point (weight W_{local}) at which the error E is not minimized. The target is the weight W_{min} that minimizes the error E, and the weight W_{local} is a weight that brings the error E into a local solution. Minimization of the error E means that the accuracy of output of the DNN becomes the best. In the DNN for which an initial weight W_1 is set at time t=1, the gradient $\partial E/\partial w$ is negative and the absolute value thereof is great. Therefore, a weight W_2 after update greatly moves in the positive direction (rightward direction) and the error function $E(w_2)$ also greatly decreases.

(B')