Claims:

1. A computer-implemented method for stereo vision measurement, the method comprising, at a computing device that includes a processing unit, a display device, and a memory communicatively coupled to the processing unit:

providing a three-dimensional visual stimulus, the three-dimensional visual stimulus composed of more than one spatially filtered elements configured to isolate stereo function, wherein the three-dimensional visual stimulus is a color anaglyph image;

displaying, via the display device, the three-dimensional visual stimulus to a user;

while displaying the three-dimensional visual stimulus to the user:

displaying, via the display device, a task corresponding to the three-dimensional visual stimulus; and

receiving a set of one or more inputs for performing the displayed task corresponding to the three-dimensional visual stimulus;

in response to receiving the set of one or more inputs for performing the displayed task corresponding to the three-dimensional visual stimulus, saving data associated with the set of one or more inputs for performing the displayed task; and

subsequent to saving the data associated with the set of one or more inputs for performing the displayed task:

determining a stereo performance of the user based on the saved data, wherein determining the stereo performance of the user includes determining based on a predetermined function a threshold at which the user is capable of stereoscopic vision and determining an associated error for the determined threshold; and

outputting a result of the determination of the stereo performance of the user.

2. The method of claim 1, wherein providing the three-dimensional visual stimulus comprises one or more of:

generating the three-dimensional visual stimulus; and

retrieving from said memory the three-dimensional visual stimulus.

3. The method of claim 1 or claim 2, wherein the spatially filtered elements are spatially filtered dot elements.

4. The method of claim 3, wherein the spatially filtered dot elements comprise one or more elements selected from the group consisting of: isotropic log-Gabor dot elements, difference of Gaussians dot elements, ring dot elements, a convolution of a spatial filter and an image object, and elements of at least two shades.

5. The method of claim 3 or claim 4, wherein providing the three-dimensional visual stimulus includes generating the three-dimensional visual stimulus by placing the spatially filtered dot elements on a grid and then offsetting each of the spatially filtered dot elements by a random amount.

6. The method of claim 5, wherein one or more of the spatially filtered dot elements has its center offset from a pixel of the display device in order to present that element at a subpixel disparity.

7. The method of any one of claims 1-6, wherein a portion of the more than one spatially filtered elements appear in a first location for a first eye and in a second location for a second eye and the portion are located in a single region of the three-dimensional visual stimulus.

8. The method of any one of claims 1-7, wherein one or more of the more than one spatially filtered elements appears offset from two or more of the more than one spatially filtered elements.

9. The method of any one of claims 1-8, wherein providing the three-dimensional visual stimulus includes generating by:

disposing more than one placeholder dots on a grid;

moving each of the more than one placeholder dots by a random amount; and

convolving the placeholder dots with a function to produce the more than one spatially filtered elements.

10. The method of any one of claims 1-9, further comprising:

repeating the steps of providing the three-dimensional visual stimulus, all of the three-dimensional visual stimuli having a first disparity; displaying the three-dimensional visual stimulus to the user; displaying the task corresponding to the generated three-dimensional visual stimulus; receiving the set of one or more inputs for performing the displayed task corresponding to the generated three-dimensional visual stimulus; saving the data associated with the set of one or more inputs for performing the displayed task; and determining the stereo performance of the user based on the saved data.

11. The method of claim 1, wherein the predetermined function is a logistic psychometric function, the method further comprising:

saving the stereo performance of the user at each disparity and fitting the logistic psychometric function to a plot of the disparity versus the performance at each disparity.

12. The method of claim 1, wherein the predetermined function is a logistic psychometric function and wherein the associated error is determined through bootstrapping.

13. A computer readable medium having stored thereon program code executable by at least one processor configured to perform the method of any one of claims 1-12.

14. A system for stereo vision measurement that includes:

a processing unit; and

a memory communicatively coupled to the processing unit and comprising computer-readable program instructions executable by the processing unit for performing the method of any one of claims 1-12.