Claims:

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

providing a three-dimensional visual stimulus, the three-dimensional visual stimulus composed of a plurality of spatially filtered elements configured to isolate stereo function;

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

receiving input data in response to the user viewing the three-dimensional visual stimulus as presented; and

determining a stereo performance of the user from the input data.

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 any one of claims 1-2, 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 any one of claims 3-4, 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 the three-dimensional visual stimulus is a color anaglyph image for viewing using color filter glasses.

8. The method of any one of claims 1-7, wherein a portion of the plurality of 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.

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

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

disposing a plurality of placeholder dots on a grid;

moving each of the plurality of placeholder dots by a random amount; and

convolving the placeholder dots with a function to produce the plurality of spatially filtered elements.

11. The method of any one of claims 1-10, further comprising: repeating the steps of providing the three-dimensional visual stimulus, all of the three-dimensional visual stimuli having a first disparity; presenting the three-dimensional visual stimulus to the user; receiving the input data; and determining the stereo performance of the user.

12. The method of claim 11, wherein all of the three-dimensional visual stimuli having at least one disparity different from the first disparity.

13. The method of claim 12, further comprising recording the stereo performance of the user at each disparity and fitting a logistic psychometric function to a plot of the disparity versus the performance at each disparity.

14. The method of claim 13, further comprising identifying a threshold at which a patient is capable of stereoscopic vision based on the logistic psychometric function and estimating an associated error through bootstrapping.

15. 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 1-14.

16. 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 1-14.