

Scientific Visualization Job Interview Questions And Answers



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Scientific Visualization Interview Questions And Answers Guide.

Question - 1:

Tell me about visualization?

Ans:

Visualization or visualisation is any technique for creating images, diagrams, or animations to communicate a message. Visualization through visual imagery has been an effective way to communicate both abstract and concrete ideas since the dawn of man. Examples from history include cave paintings, Egyptian hieroglyphs, Greek geometry, and Leonardo da Vinci's revolutionary methods of technical drawing for engineering and scientific purposes.

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Question - 2:

What is scientific visualization?

Ans:

Scientific visualization –also spelled scientific visualisation is an interdisciplinary branch of science and primarily concerned with the visualization of three-dimensional phenomena (architectural, meteorological, medical, biological, etc.), where the emphasis is on realistic renderings of volumes, surfaces, illumination sources, and so forth, perhaps with a dynamic (time) component

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Question - 3:

What is information visualization?

Ans:

Information visualization or information visualisation is the study of interactive visual representations of abstract data to reinforce human cognition. The abstract data include both numerical and non-numerical data, such as text and geographic information. However, information visualization differs from scientific visualization

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Question - 4:

What is volume visualization?

Ans:

volume visualization examines a set of techniques that allows viewing an object without mathematically representing the other surface. Initially used in medical imaging, volume visualization has become an essential technique for many sciences, portraying phenomena become an essential technique such as clouds, water flows, and molecular and biological structure. Many volume visualization algorithms are computationally expensive and demand large data storage. Advances in hardware and software are generalizing volume visualization as well as real time performances

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Question - 5:

What is ray casting?

Ans:

Ray casting is the use of ray-surface intersection tests to solve a variety of problems in computer graphics.

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Question - 6:

What is a Histogram?

Ans:

Histogram is a graphical representation of the distribution of data. It is an estimate of the probability distribution of a continuous variable

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Question - 7:

Multimedia Scientific Visualization Job Interview Questions Part Five!

Ans:

What do you understand by visualization?
What is scientific visualization? How is it different from visualization?
What is the main purpose of scientific visualization?
Give a brief case study on applications of visualization in field of science.
What is the significance of IT industry over scientific visualization?
Name few of the popular scientific visualization techniques.
What are the tools available in the market these days that are suitable for scientific visualization?
Differentiate visualization with statistical graphics & infographics.
Explain the downsides of visualization compared to other techniques.
Is it possible to create interactive visualization? Which tool is best in such scenarios?

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Question - 8:

Multimedia Scientific Visualization Job Interview Questions Part Four!

Ans:

Draw the flowchart of scientific visualization stages.
What are the primitive forms of data representation?
What do you understand by computer simulation? How can it help a scientist in visualization?
What is information visualization? Is there any difference between data visualization & information visualization?
What is volume visualization? How data can be visualized using it?
What is ray casting? How it helps in surface rendering?
Give a scenario in which radiosity or global illumination plays an important role.
What is Ray tracing? How is it different from ray casting?
If there is a scenario in which you have visualize a multi dimensional dataset, which visualization technique you would prefer to use?
In case of huge datasets to be visualized which technique is best suited?

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Question - 9:

Multimedia Scientific Visualization Job Interview Questions Part Three!

Ans:

Name few business cases in field of geography that can make use of scientific visualization to assist them in their work.
How is scientific visualization different from mathematical visualization?
What is the main problem faced by professionals in field of visualization?
How modeling of color is done?
Explain RGB & HSV color models.
How data is mapped to the colors?
Explain the taxonomy of visualization techniques.
How will you plot 1D data? Give few examples of techniques one can use to map scientific data.
What is a Histogram?
Mention few of the techniques that can be used to map 2D data.

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Question - 10:

Multimedia Scientific Visualization Job Interview Questions Part Two!

Ans:

What is a contour? What are its applications?
For what purposes a Height field plot can be used?
What are Isosurfaces? What is their significance?
How can one visualize 3D data over 2D plane?
What are the visualization vectors? Explain Arrow Plot.
What are Streamribbon, Streamsurface, and Streamtube?
What is a surface view? How is it different from contours?
What are the applications of 2D histogram?
What do you mean by interpolation? How it helps in visualization?
What do you mean by surface interrogation & modeling?

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Question - 11:

Multimedia Scientific Visualization Job Interview Questions Part One!

Ans:

What is the best technique that can be used to map whole visible universe?
What are the design implications that must be kept in mind while planning for visualization?
What is scientific visualization glossary?
What role does image analysis play in medical visualization?
What do you understand by volume visualization?
What do you mean by virtual endoscopy? How is it helpful?
How visualization helps in education?

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