



Australian Government



Drishti, and how to use it

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- Technology has allowed great advances in 3-D graphical visualisation
- Most games and other applications use ‘Surface rendering’ to show the 3-D object on a screen
- Here a surface is constructed from thousands of polygons (e.g. triangles)
- Light ray intensity, reflectance and colouring is calculated for each polygon, from your ‘eye’

Volume rendering

- For visualising a 3-D data (volume) set we need a more sophisticated visualisation
- Each element (voxel) in the data set effects the colour and intensity of light rays reaching your eye
- Calculations have to be made on the cube, and include opacity as well as colour in the ray-tracing

- VG Studio – commercial
- 3-D Slicer - medical
- Avizo – commercial, analytical
- Many other academic (free) applications:
 - MeVisLab, Osirix, ImageVis3D, LiveVolume, Volview, 3DView... etc.
- We will focus on: Drishti – free from the ANU

- Drishti is an open-source scientific visualisation software designed by Ajay Limaye at the National Computational Infrastructure's VizLab, at the Australian National University, Canberra
- Drishti works on GPUs with OpenGL 2.0 capability.
- *Citation: A volume exploration and presentation tool. Proc. SPIE 8506, Developments in X-Ray Tomography VIII, 85060X (October 17, 2012)*

Learning by doing...



To get (non transparent) black background switch on "Backplane" under "Shader Widget"

A book to follow...



We will generally follow the manual called 'The Basics of Drishti' written and compiled by Bailey Lovett of the Australian National University Research School of Biology...

<http://www.scribd.com/doc/191007517/The-Basics-of-Drishti-A-Free-To-Download-Volume-Exploration-Presentation-Tool>

- Importing an Image File into Drishti
- Opening an Image in Drishti
- Adjusting Image Lighting & Shading in Drishti
- Using Transfer Functions in Drishti
- Using Clipping Planes in Drishti