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Highlight: Toy LEGO Man Segmentation
<http://blogs.sun.ac.za/ctscanner/2014/12/04/lego-man-segmentation/>

CT Scanner makes International Headlines
<http://www.ge-mcs.com/en/industry-solutions/others.html>

http://www.ge-mcs.com/download/ind-solutions/other/GEA31402%20Computed_Tomography_R4.pdf

3D Printing of samples scanned at the CT Scanner

Recently we scanned another Brooding Ophiuroid sample (brittlestar - see October newsletter for more info). Due to the size of the sample (25mm) it was difficult to observe small features of the specimen. This granted us the opportunity to see how CT Scanning combined with 3D printing can enhance the way we can visualize and practically demonstrate these type of small samples and specimens. In the experiment a surface model was created from the CT scan and sent for 3D printing. The surface model was enlarged approx. 25 times to produce a large scale version of the sample (Figure 1). 3D scanning and printing is obviously a powerful combination, hence the next step in our facility will be a 3D printing facility to be launched early in 2015 – watch this space!

More information:

<http://blogs.sun.ac.za/ctscanner/2014/12/04/3d-printing-of-samples-scanned-at-the-ct-scanner/>

Welcome

Welcome to the November newsletter – in this edition we focus on **new additions** to the facility and a recap of the year. Over the past year the CT scanner facility has grown exponentially. With the NRF Equipment grant we were able to acquire the brand new GE Nanotom S NanoCT Scanner together with top of the range PCs and Volume Graphics VGStudio Max 2.2 for advanced 3D analysis. We also acquired spectroscopy analysis equipment which include NIR and RAMAN advancing our analytical capabilities.

The Future - New Pricing Structure

It has come to our attention that the needs of our clients have started to change as they become more competent with using the CT facility. The new year will include a new pricing structure - one major addition will be a new Low-Cost option for the more competent users which will allow more bang for your buck. (We're already the lowest cost facility in the world, but hey let's push the limits)

Watch this space more info will follow in the next Newsletter January 2015!!

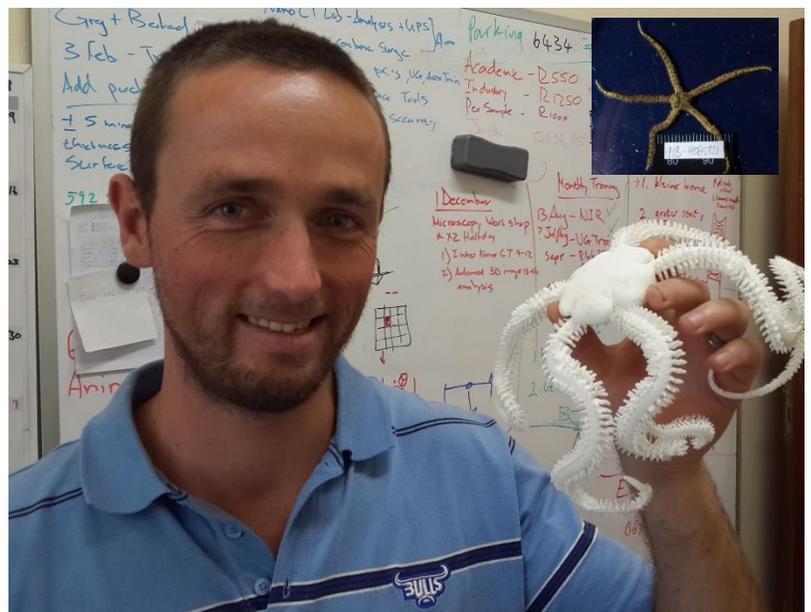


Figure 1: 3D print of a Brooding Ophiuroid (brittlestar) with a photograph of the 25 mm specimen in top right corner

Highlight: Toy LEGO Man Segmentation

Over the past year we have made significant advances in our analysis capabilities on CT data. The main addition to our skillsets is the ability to perform more advanced segmentation on samples with small differences in density. In the case of most CT data sets this is the most difficult part: in general parts do not have homogeneous density and can vary significantly within the sample. In this example segmentation was performed on a LEGO man to illustrate how connected parts with similar density can be removed from each other using automated segmentation tools which form part of the VGStudio Max 2.2 package. We can take apart any type of object for you virtually and create STL cad files from each part, or make dimensional or volumetric measurements.

More information:

<http://blogs.sun.ac.za/ctscanner/2014/12/04/lego-man-segmentation/>

CT Scanner Team 2014

The CT Scanner team would like to thank all our clients for their dedicated support during 2014. The year included some unexpected breakdowns, new equipment installations and lots of interesting new projects. Below is a statistical overview of our clientbase during 2014. The bulk of our work is from Stellenbosch University (just less than 50%). Commercial clients make up a significant proportion (>25%), while other academics make up the rest. The University of Cape Town in particular has used us significantly, making up 10% of the total. From the CT Scanner team – Thank you to everyone!

Stellenbosch CT Scanner makes international waves

<http://www.ge-mcs.com/en/industry-solutions/others.html>

http://www.ge-mcs.com/download/industry-solutions/other/GEA31402%20Computed_Tomography_R4.pdf

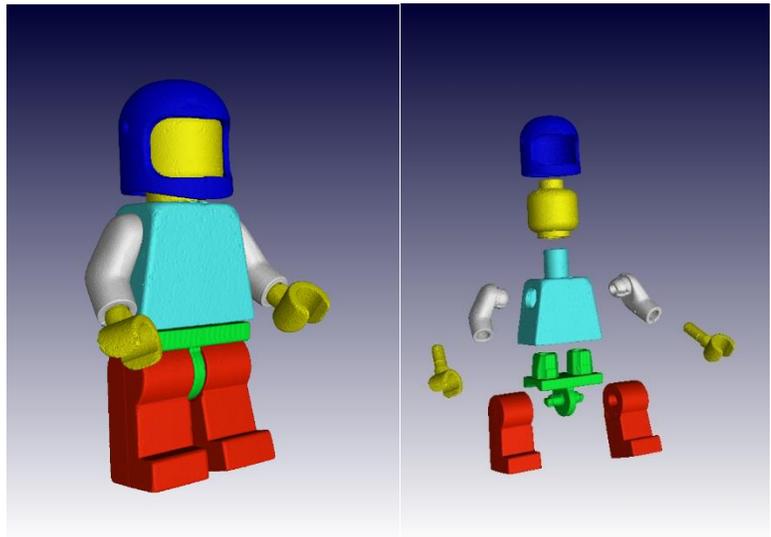


Figure 2: CT Images of segmented LEGO Man



Figure 3: CT Scanner Team 2014. From Left: Anton du Plessis, Stephan le Roux, Jarlen Beukes and Stacy-Lee Lewis

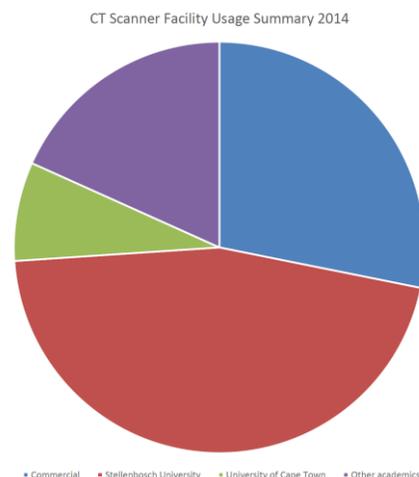


Figure 4: CT Scanner Facility Usage Summary 2014

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Acknowledgements

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