

Archives

- > [February 2015](#)
- > [January 2015](#)
- > [December 2014](#)
- > [November 2014](#)
- > [October 2014](#)
- > [September 2014](#)
- > [August 2014](#)
- > [July 2014](#)
- > [June 2014](#)
- > [May 2014](#)
- > [April 2014](#)
- > [March 2014](#)
- > [February 2014](#)
- > [January 2014](#)
- > [December 2013](#)
- > [November 2013](#)
- > [October 2013](#)
- > [September 2013](#)
- > [August 2013](#)
- > [July 2013](#)
- > [June 2013](#)
- > [May 2013](#)
- > [April 2013](#)
- > [March 2013](#)
- > [February 2013](#)
- > [January 2013](#)
- > [December 2012](#)
- > [November 2012](#)
- > [October 2012](#)
- > [September 2012](#)
- > [August 2012](#)
- > [July 2012](#)
- > [June 2012](#)
- > [May 2012](#)
- > [April 2012](#)
- > [March 2012](#)
- > [November 2011](#)
- > [October 2011](#)

You are here: [Home](#) » [Innovation](#) » [NTU Startup Unveils World's First Rotary 3D Printer With Scanning Capabilities](#)

NTU Startup Unveils World's First Rotary 3D Printer With Scanning Capabilities

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Nanyang Technological University's (NTU) start-up Blacksmith Group has developed the world's first compact rotary 3D printer that can also scan items into digitized models.

Unveiled at the American Association of Science (AAAS) Annual Meeting in San Jose, California, the printer named 'Blacksmith Genesis,' allows users without much knowledge of 3D software to scan any item and then edit the digitized model on the computer and print it out in 3D.

Housed in a black aluminium casing, the high-tech device weighing 6 kilograms features a 2-inch LCD display, Wi-Fi, an integrated SD-card reader and a USB connection for instant printing.

Blacksmith Genesis uses an innovative rotary platform for its printing and scanning, unlike other commercial 3D printers. This patent-pending revolving platform allows for true 360-degree scanning, and can print items up to 6,650 cm³ (about 6.5 liters), twice the size of those printed by other similar-sized 3D printers in the market.

With a fine resolution of 50 micrometers, the reproductions will be twice as detailed as compared to other compact 3D printers. Likewise, scanning of objects with its 5 megapixel camera takes only 6 minutes, twice as fast as other 3D scanners in the market.

Blacksmith Genesis is also the first to feature remote live monitoring and automatic error detection thanks to its in-built camera. This allows users to monitor and control the printing process on their smartphone from anywhere in the world through the Internet.

The device is the brainchild of Blacksmith Group's founders, NTU engineering graduate Dr Alex Pui Tze Sian and Fang Kok Boon. Boon, CEO of Blacksmith Group, said their aim is to make 3D printing easy and accessible to the average consumers.

"We designed Blacksmith Genesis with the average hobbyist in mind. Most 3D printers sold on the market now are not really user-friendly as their 3D models and blueprints usually have to be designed from scratch on the computer," Boon said.

"However, with our device, 3D printing will be fuss-free as users won't need to design an original work from scratch as they can just use our Blacksmith Sorcerer 3D software. By scanning any physical item, they can immediately copy and print the item or use the digitized object as a base to form their own 3D object," Boon intones.

The first batch is now ready to be shipped out in March to early adopters who supported Blacksmith Group's crowd funding campaign.

Image and content courtesy of Nanyang Technological University

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