



# Cambridge University 3D Printing Society

STUDENTS TAKE HOLD OF THEIR FUTURE THROUGH INSPIRATION AND COLLABORATION

*“We want the next generation of engineers to be prepared, to have knowledge of additive manufacturing and to be able to confront the problems of the modern global workforce head on.”*

*– James Roberts, Cambridge University  
3D Printing Society*

## CASE STUDY



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Founded in 2016, the Cambridge University 3D Printing Society (CU3DSoc) is still in its infancy. CU3DSoc is comprised of over 30 first and second year undergraduates, predominantly engineering students. With plans to include art, architecture and medical students in their membership over the coming year, CU3DSoc has aspirations to become the focal point for 3D printing within the university. Thanks to access to several Stratasys 3D printers, the society is undertaking complex engineering projects, with an outline to educate peers and create a nationwide 3D printing network.

## A Self-Teaching Society

Additive manufacturing is often used in the department, but is not formally taught in the engineering curriculum. So with all the society members self-taught, newcomers and novice members learn through hands-on training with help from more experienced members.

“Every week we have a set of students who have access to our 3D printers. They come up with all kinds of designs and within a few hours they can 3D print the final product. This is invaluable for teaching our members,” said James Roberts, CU3DSoc Director. Exposure to 3D printing and the ability to operate the machines has enabled members to learn how to solve complex problems while also providing a skillset to prepare them for their future careers.

## Stretching the Scope

Taking this all-encompassing approach, CU3DSoc is working with 3D printing societies at the University of Oxford and Huddersfield University with hopes of creating a national network. “Additive manufacturing, and companies such as Stratasys, will continue to play a larger role in advancing multiple industries,” explained Roberts. “We want the next generation of engineers to be prepared, to have knowledge of additive manufacturing and to be able to confront the problems of the modern global workforce head on.” With this in mind, CU3DSoc members are using their skills to take on projects that solve real-life problems.

## Real-World Problem Solving

REMAP, a disability charity creating custom pieces of sports equipment, has a current approach to producing a robotic archery turret for paralyzed children that is very complex and involves combining multiple materials like wood, metal and Velcro. “The team’s biggest problem was reliability,” said Roberts. “A lot of force goes through the handle and the current strap simply wasn’t strong enough to withstand the force passing through it.” To overcome this challenge, the team 3D scanned the bow handle and frame, and 3D printed a unique part to replace the strap and hold the device firmly in place. Thanks to 3D printing, the team could produce this component within 24 hours, compared to the weeks required to produce a similar component traditionally.

A team of CU3DSoc members are working on a brief set by Open Bionics as an extension of their flexible hand project, which aims to create a 3D printed prosthetic hand for amputees with some remaining wrist or elbow function. The team chose to bypass the traditional, time-consuming and expensive plaster-casting method, and instead opted for 3D printing, enabling them to keep costs down to £10-£20 per product. The final products will be sent to developing countries where access to prostheses is limited.



Society members use 3D printing to tackle real-world problems.



Members are self-taught, enabling them to teach and learn from each other through hands-on training.

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