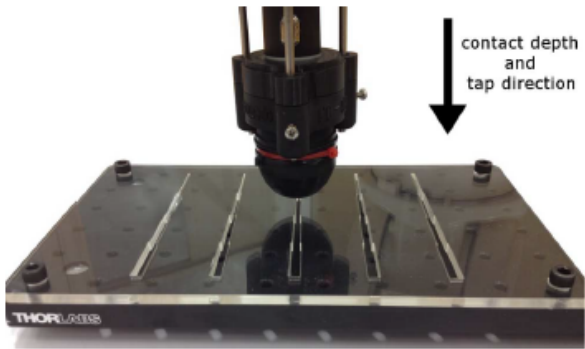


Artificial fingertip that 'feels' wins international robotics competition

18 January 2017



Credit: University of Bristol

An open-source 3D-printed fingertip that can 'feel' in a similar way to the human sense of touch has won an international Soft Robotics competition for its contribution to soft robotics research.

Pushing the boundaries of soft robotics, the open-source tactile fingertip, known as TacTip, is a 3D-printed tactile sensor that has been developed by the Tactile Robotics Team from Bristol Robotics Laboratory (BRL).

The fingertip meets the need for a cheap, robust, versatile tactile sensor to give robots an artificial sense of [touch](#). The sensor has a unique design in which a webcam is mounted inside a 3D-printed soft fingertip to track internal pins that act like touch receptors inside our own fingertips, making it cheap to build and highly customisable.

Dr Nathan Lepora, Senior Lecturer in Robotics at the University of Bristol and BRL and leader of the Tactile Robotics Team, said: "An artificial sense of touch is the key for enabling future robots to have human-like dexterity. Applications of artificial touch span from the future robotization of manufacturing, food production and healthcare, to prosthetic

hands that restore a sense of touch."

Benjamin Ward-Cherrier, PhD student at BRL, added: "TacTip is a cheap artificial [fingertip](#) that anyone can build and customise with a 3D-printer, opening up the field of tactile robotics to many more researchers."

Over 80 teams entered the 2016 Soft Robotics competition hosted by Soft Robotics Toolkit. The competition, which is in its second year, aims to develop and showcase novel robots and fundamental research related to soft robotics.

The competition was divided into three categories. The first category was for the most significant contribution to fundamental research in soft robotics. The second was a design competition for college level students and enthusiasts to develop novel robots using tools found on Soft Robotics Toolkit's website and the final category was a design competition for high school students also designing novel, soft robots.

Open TacTip was developed at BRL, a collaboration between the University of Bristol and the University of the West of England (UWE Bristol), by a team of researchers in Tactile Robotics. The open TacTip entry to the [soft robotics](#) competition was made by Benjamin Ward-Cherrier, Maria-Elena Giannaccini and Nick Pestell on behalf of the Tactile Robotics Team.

Provided by University of Bristol

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