RE2 Robotics Receives $3 Million to Develop Dexterous Underwater Robotic Hand for U.S. Navy

RE2 Robotics, developer of human-like robotic manipulator arms, has a new deal with the Office of Naval Research to develop an underwater robotic hand. RE2 Robotics
PITTSBURGH – RE2 Robotics, developer of human-like robotic manipulator arms, has received $3 million from the Office of Naval Research to develop a dexterous, underwater robotic hand with tactile feedback, the company said in a release.

The program, called Strong Tactile mARitime hand for Feeling, Inspecting, Sensing and Handing (STARFISH), will create an advanced end-effector for mine countermeasures and explosive ordnance disposal for expeditionary forces.

> *RE2 Robotics has received $3 million in funding from the Office of Naval Research to develop a dexterous, underwater robotic hand with tactile feedback. @USNavyResearch #robotics #Pittsburgh #Roboburgh https://t.co/H6BeLhB3GS pic.twitter.com/YYEEn53N26*
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> *— RE2 Robotics (@re2robotics) May 20, 2019*

Using next-generation tactile sensing technology and a multifinger, electromechanical design, STARFISH will allow operators to locate,

identify and neutralize hidden and visible explosive threats on land and underwater. STARFISH-enabled manipulators will be deployed on both ground-base and underwater robotic system to defeat explosive threats.

“The development of STARFISH takes underwater robotic technology to the next level by providing operators with the ability to ‘feel’ and sense the environment around them while remaining at a safe distance,” said Jorgen Pedersen, president and CEO of RE2. “The use of advanced tactile sensing and intelligent grasping will improve operational performance by removing operators from dangerous areas and allowing them to quickly and accurately respond to explosive threats.”

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> *Jorgen Pedersen, president and CEO of RE2*

RE2 will work with researchers at UCLA and the University of Washington to develop the hand, which will use state-of-the-art tactile skin and sensorized fingertips that are capable of sensing normal and shear forces.
Operators will command the hand using information provided by external sensing, such as cameras, sonar or LIDAR, which will then be processed with machine-learning algorithms to assist the operator in manipulating the object.

“Tactile sensing at the end effector can provide a wealth of information about the environment to a robotic system and its operator,” said Dr. Andrew Mor, RE2’s principal investigator. “Using a rich network of sensing, machine learning and assisted manipulation, STARFISH will be able to perceive and then share its interpretation of the environment with the operator, allowing naval expeditionary forces to manipulate and control the robot at human speed.”