

# The Future of Business in Pittsburgh

September 2021

## Pittsburgh's RE2 Robotics Marks its 20th Anniversary, Launches New Robotic Arm

RE2 Robotics, a Carnegie Mellon University spin-off company that develops intelligent robotic manipulation systems for use in the aviation, defense, energy, and medical industries, is marking their 20th anniversary with the launch of a new robotic arm, the RE2 Sapien™ 6M. According to RE2, the 6M model “includes embedded intelligence, integrated arm control, an unprecedented strength-to-weight ratio, and a sleek hardware design that can withstand extreme temperatures and environmental conditions. The arm has six degrees of freedom, including continuous wrist and elbow roll joints, which enable precise manipulation and placement of objects.”

RE2's mission is to develop mobile manipulation systems, consisting of robotic arms, intuitive controllers, and advanced autonomy software, that empower humans to complete tasks safely and efficiently. Originally founded in July 2001 by Jorgen Pedersen, RE2 incubated at the National Robotics Engineering Center (NREC) in Pittsburgh. Today the RE2 campus encompasses two buildings in Pittsburgh's “Robotics Row” area and includes space for indoor, outdoor, and underwater testing of robotic systems.



Here a new RE2 Sapien™ 6M robotic arm demonstrates its ability to lift 80lbs.

According to an interview with Jorgen Pedersen on the Future Grind podcast, the company is based in Pittsburgh in part because of the "top-notch talent", particularly in fields related to robotics, coming out of Pittsburgh-area universities.

RE2 now has more than 85 employees and has created robotic systems for more than 100 customers and received more than \$75 million in funding from the United States Department of Defense. Examples of this funding include \$1 million to develop a system to autonomously refuel helicopters in the field, \$1.9 million to autonomously construct solar fields, \$1.1 million to autonomously locate an injured soldier and move them to safety, and \$2.5 million to address deep ocean explosive devices.

To assist with the response to the COVID-19 pandemic, RE2 used its 3D-printing capabilities to fabricate face shields for workers on the front lines. The company currently has a number of robotic mobile manipulators and control systems commercially available for use in a wide variety of industries.

## Innovation Works Helps to Grow Pittsburgh Startups

The United States' most active seed-stage investor in the third quarter of 2020 was Pittsburgh-based Innovations Works (IW), which seeks to make Southwestern Pennsylvania a center for innovative startups and tech investors. So far Innovation Works has invested more than \$110 million in over 700 companies, including many of the most well-known startup companies in the Pittsburgh area from various industries including life sciences, robotics, energy, and more.

In addition to their seed fund, IW operates the three renowned startup accelerators AlphaLab (which focuses on software companies), AlphaLab Gear (which focuses on physical product companies), and AlphaLab Health (which focuses on healthcare and life science companies).



The summer 2017 cohort of Innovation Works' AlphaLab accelerator.

According to the Innovation Works website, "To date, more than 100 venture capital firms from across the United States have invested in IW-funded companies. By connecting entrepreneurs to investors across the country, IW has helped to catalyze more than \$2.9 billion in total follow-on investment. Since the seed fund began, more than 100 venture capital firms clustered in major financial and technology centers across the country have invested in the IW portfolio." A number of IW portfolio companies have been acquired by big name corporations, including NoWait (acquired by Yelp), Black Locus (acquired by Home Depot), and Shoefitr (acquired by Amazon).

Innovation Works is a member of the Ben Franklin Technology Partners, which is one of the nation's longest-running technology-based economic development programs, and is supported by the Pennsylvania Department of Community and Economic Development. Innovation Works also works alongside Ernst & Young to publish an annual report highlighting investment in Pittsburgh's technology sector. The 2020 report can be found at <https://pub.ey.com/public/2021/2101/2101-3683794/pittsburgh-technology2020/index.html>. For more information, or to browse IW's portfolio companies, visit <https://www.innovationworks.org/>.

## Pittsburgh Business News and Updates

- Koop Technologies, focused on insurance for autonomous vehicles, raises \$2.5 million (<https://www.forbes.com/sites/richardbishop1/2021/09/01/trucking-insurance-in-the-age-of-automation-startup-koop-technologies-raises-25-million-seed-round/>)
- Pittsburgh Inno launches to cover the city's thriving startup and tech communities (<https://www.bizjournals.com/pittsburgh/inno/stories/Inno-insights/2021/09/07/the-pittsburgh-ecosystem-at-a-glance.html>)
- Carnegie Mellon announces remote-controlled “cloud lab” for artificial intelligence-driven experimentation (<https://www.cmu.edu/news/stories/archives/2021/august/first-academic-cloud-lab.html>)
- Pittsburgh-area 3D Printer Manufacturer Deepens Partnership with German-based Fraunhofer Institute for Manufacturing Technology and Advanced Materials ([https://www.exone.com/en-US/Resources/News/ExOne\\_Fraunhofer\\_IFAM\\_Deepen\\_Relationship\\_Material](https://www.exone.com/en-US/Resources/News/ExOne_Fraunhofer_IFAM_Deepen_Relationship_Material))
- Pittsburgh Man Seeks to Identify Family of Japanese WWII Soldier (<https://www.post-gazette.com/local/south/2021/08/15/White-Oak-man-searches-for-family-in-photos-taken-from-Japanese-soldier/stories/202108100114>)



### About Ryan

Ryan O'Shea is a JETRO Investment Advisor focused on connecting Japanese companies to opportunities in Pittsburgh, Pennsylvania. He is the host of Future Grind, a podcast that explores the ethics and impact of emerging science and technology. In 2017, Ryan co-founded an artificial intelligence startup that was named a Top 10 team in the IBM Watson AI XPRIZE. Ryan has represented NASA and CalTech's Jet Propulsion Laboratory as a Solar System Ambassador and serves both as a World Economic Forum Global Shaper and an ambassador for Pittsburgh AI. He is a graduate of the University of Pittsburgh & serves on the boards of multiple non-profit organizations. He can be reached at [Ryan@futuregrind.org](mailto:Ryan@futuregrind.org).