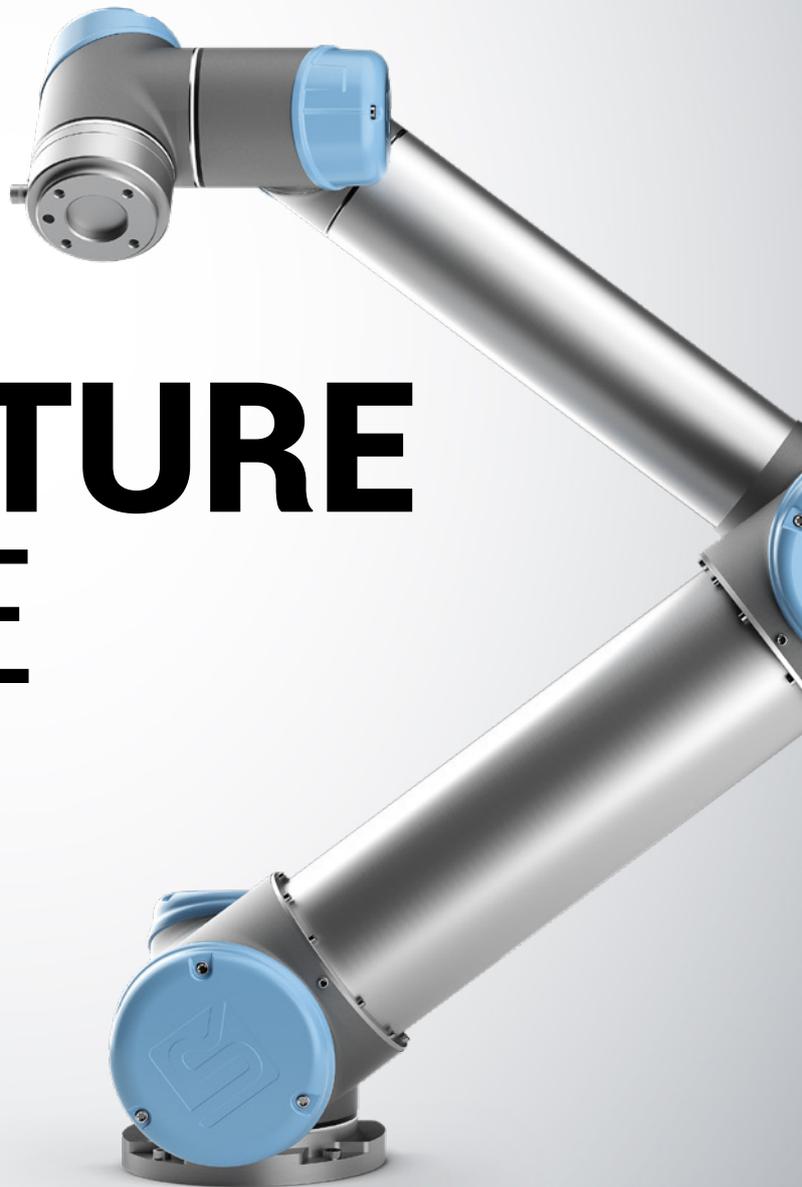




UNIVERSAL ROBOTS



**THE FUTURE
IS HERE**

OUR VISION

When we started developing the idea of a lightweight and flexible robot, the industry was dominated by rigid, heavy and complex automation solutions - even for simple pick and place tasks.

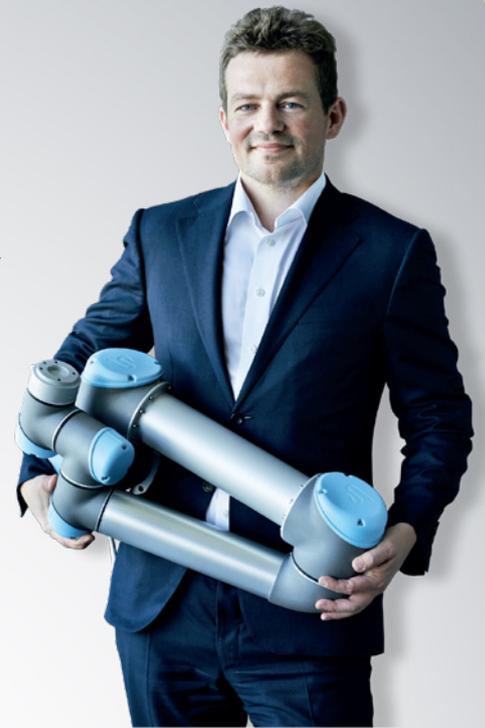
We wanted to create a collaborative robot, also known as cobot, that completely changed the game, a tool that could benefit everybody and be accessible by all. In doing so, we empower businesses by putting automation back into the hands of operators, reversing the features of traditional industrial robot on nearly every point.

Universal Robots (UR) embodies the ease of use and Do-It-Yourself (DIY) concept at best in cobot technology. Small, lightweight and compact, it can easily be moved around to fit existing production layout. Its intuitive user interface allows easy programming to set up and perform tasks in minutes. UR cobots can be operated without safety guarding right next to human workers (subject to risk assessment). We now enable automation in areas previously considered too complex or costly.

The future will see more advances in human-robot collaboration, changing the way we work and interact with robots. The future is collaborative.

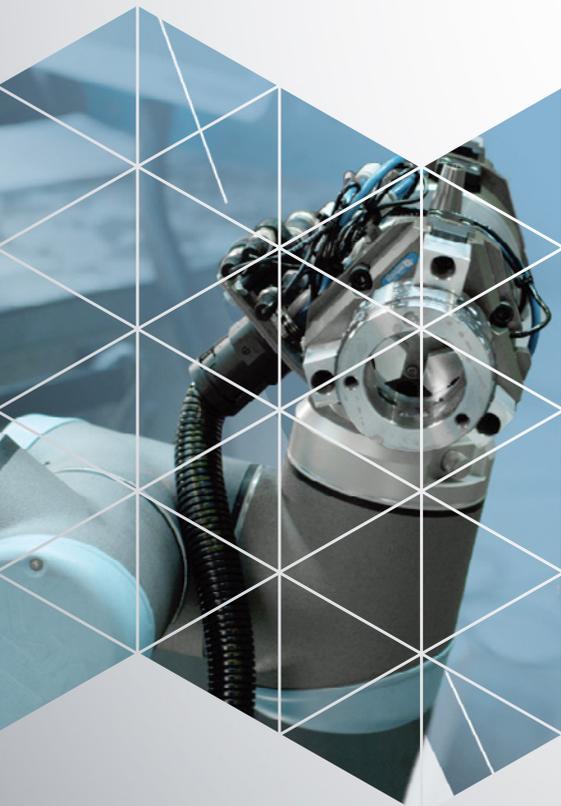
Chief Technology Officer and Founder
Esben H. Østergaard

Living in the Philippines at that time, Esben developed his first robot when he was only four years old. The electrician whom he was interacting with had to use a cat to pull cords out of a pipe. Even at an early age, Esben had the foresight to simplify this process using automation. He made a small battery operated vehicle that had small feet out of Lego that could enter the pipe and pull the cords out.



We are delighted to deploy UR10 robots to our lines to increase productivity, cost-effectiveness and product quality.

Yong Hock Thye,
Business Development Director,
PLC Industries, Singapore



OUR FOUNDING STORY

Universal Robots was founded in 2005 by three Danish students, including Esben while doing their PhD project at the Southern University of Denmark. At that time, they were researching on how industrial robots can help automate food processes in the Food & Beverage industry.

They found out that to automate the process of putting pepperonis on pizzas, one would require an industrial robot weighing about 100 kg to drive around on a euro pallet, which was highly inflexible.

They also discovered that only Multinational Companies (MNCs) could afford to deploy industrial robots to automate their production lines. Many manufacturers, moreover, perceived industrial robots as large, cumbersome, heavy, unsafe and difficult to program – programming was considered a trade made by engineers for engineers and overall, robots were thought of as expensive to own and difficult to deploy.

From these, an idea was born to make robot technology more flexible and accessible.



OUR JOURNEY IN BRIEF

2003

Idea to create a flexible and accessible robot emerged

2005

Universal Robots founded in Denmark

2008

Launch of UR5, the world's first cobot

2009 - 2011

Distribution in Europe and Asia

2012

- Extended market to US and set up subsidiary in New York
- Unveiled UR10 – longer reach and greater payload

2013 - 2014

Established subsidiaries in China and Spain

2015

- Added APAC subsidiary in Singapore
- Launched UR3, world's first tabletop cobot
- Acquired by Teradyne for USD 285m

2016

- New subsidiaries in Czech Republic, Germany, India and Japan
- Launched Universal Robots+

2017

Started Universal Robots Academy

"Universal Robots' reputation as a pioneer in collaborative robots has greatly prompted us in choosing the right automation tools. The ease of use, safety and flexible aspects increases work efficiency, giving us stronger confidence in achieving the best results for our production."

Ian Chan, Vice President, Group Strategy & Monitoring, Ge-Shen Corporation Berhad, Malaysia



OUR BUSINESS MODEL

Universal Robots' robot arms are marketed internationally through an extensive network of channel partners – distributors and system integrators. At the UR Southeast Asia & Oceania (UR SEO) Headquarters in Singapore, we provide sales, marketing and technical support for our channel partners across the region. UR Technical and Sales & Marketing kits as well as a suite of training programs are also available to support the work of channel partners.



Universal Robots is our clear choice in exposing the students to the latest technologies in a safe and convenient manner. Collaborative robots make learning seamless - our students are satisfied and inspired with easy programming.

Engr. Renann Baldovino, Assistant Professor, De La Salle University, the Philippines



Unique features of UR and its benefits

UNIVERSAL ROBOTS GIVES YOU THE COMPETITIVE EDGE

Lightweight, small and compact robots that allow users immense flexibility for redeployment

Our UR3 (3kg payload, weighs 11kg), UR5 (5kg payload, weighs 18kg) and UR10 (10kg payload, weighs 29kg) are extremely lightweight, as compared with traditional industrial robots in the market that weigh between 50-100kg on average.

Coupled with a small, compact, lightweight controller box of 29kg and a tiny footprint of about 1sqm, Universal Robots provides manufacturers boundless flexibility in integrating robots to their production line, without having the need to change the production layout.

An added benefit to this is that you will be able to use the robot for its entire lifespan since the robots can easily be moved around within the production facility. When mounting, set-up and programming can be done reasonably quickly as the robots are ideal for today's High Mix Low Volume manufacturing environment or the running of small batch and seasonal productions.



Collaborative and safe to work in close proximity with workers without safety guarding (subject to risk assessments)

Our robots are certified to ISO Standard 13849 for Safety of Machinery, at Performance Level d by TÜV Nord (The German Technical Inspection Association). This means that all safety functions (such as the TCP force limitation, which can be set as low as 50N on the UR3) are extremely reliable. In many situations, no further investments are required to install and maintain safety guarding and devices (subject to the necessary risk assessments), resulting in a very reliable system.

Businesses can also be sure that their workers are safe when working alongside cobots, with the introduction of ISO/TS 15066 - the world's first technical specifications for the safety requirements of collaborative robot systems, aimed at helping integrators of robotic cells to conduct risk assessments when installing cobots.

Universal Robots technology has a patented safety system which features seven fixed safety functions, emergency and safeguard stopping mechanisms to protect workers from being exposed to hazards in the workspace as well as digital output safety signals that can be sent to other safety equipment within the installation to report the status of the robot system in a safe and reliable manner.

Eight adjustable safety limits provides the adjustment of joint positions and speeds, TCP positions, orientation, speed, and force as well as the momentum and power of the robot. Each of these can be set according to the requirements deemed necessary in risk assessments based on the guidelines of ISO/TS 15066.



Knowing that our employees can work in very close proximity to the UR5 without a safety cage gives us great peace of mind.

Matthew Murphy, Production Manager, Prysm Industries, Australia



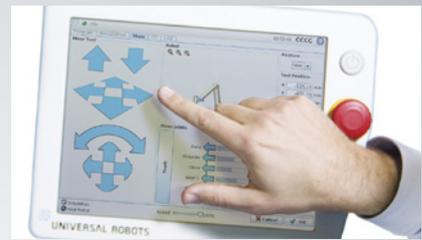
Simple to program such that floor workers are able to learn to program robots independently without relying on engineers and incurring hefty engineering fees

With Universal Robots, you will be able to upgrade the skills of your workers continuously. As the robots are simple to program and operate, workers can be coached to advance their skills to operate machines instead of performing monotonous and repetitive manual tasks. Programming can be done via a teach pendant whereby the user friendly graphic user interface (GUI) on a tablet device allows the programmer to drag and drop programming routines required for the specific production line.

There is also a freedrive mode whereby programmers can drag the robot arm to where they need to define the waypoints in their programs. This shortens the programming time and makes it more intuitive for non-programmers to learn how to program.

Fastest payback in the industry

By deploying Universal Robots, businesses can typically enjoy an average payback period of 12 months. Cost savings are also achieved from various factors that are inherent in UR cobots' design – easy programming, simplified integration and minimal aftersales maintenance among other things. This results in very low total initial ownership cost of UR compared to many traditional robots.



We paid off the UR3 within 6 months, which means we can reinvest in further product development and innovation.

Quintin Fowler, Managing Director, TCI New Zealand



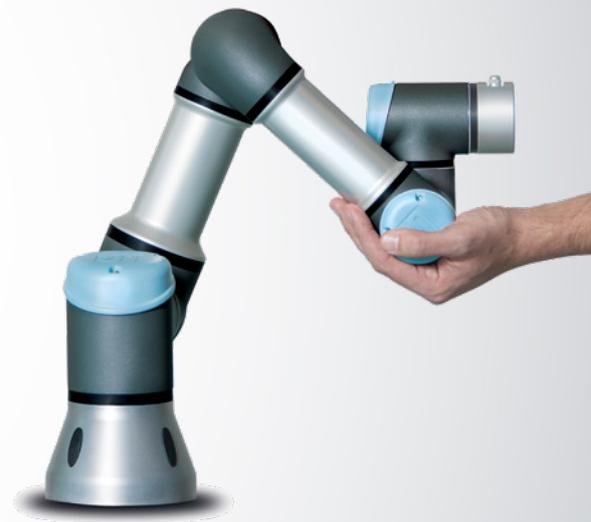
MODULAR DESIGN

Universal Robots is highly flexible and relevant across a wide range of industries. We produce 6-axis articulate robots with 360 degree rotation on all joints and with the UR3 having an infinite rotation on its end joint.

The design of the robot is modular, whereby each joint contains its own gear and servo motor. This ensures easy troubleshooting as well as minimal maintenance and spare parts stocking.

The robot is also very quiet - producing minimal noise when in operation. It uses approximately 125 - 250 watts of power depending on the robot model.

No transformers are required when plugging to a power source. Universal Robots uses a one-phase power supply, which can be plugged and played immediately.



SOFTWARE

At Universal Robots, we develop and write the software. We currently have one of the most numbers of language capabilities (20 languages) amongst other traditional industrial robots in the market. In essence, you will be able to benefit between 30-40% cost savings in integration costs when you incorporate Universal Robots into your production line as compared to other traditional industrial robots in the market.

Universal robots has truly made automation possible and more affordable for Small & Medium-sized Enterprises (SMEs).

"Universal Robots is our best solution to automation. We achieve better product quality and precision in manufacturing, thus reducing the cost of production. UR's collaborative feature benefits our operators, who work alongside with UR robots that are user-friendly and easy to use."

Meechai Inala, Technical Engineer, OEI Manufacturing Co., Ltd., Thailand

CONSISTENTLY AT THE FOREFRONT OF INNOVATION WITH INTERNATIONAL AWARDS

Making robots simple, flexible and affordable



2017

- Named the **Best Robotics Provider** at the Asian Manufacturing Awards 2017 for 3 consecutive years
- Universal Robots won the **Golden A' Design Award** in the Engineering and Technical Design Category
- UR+ rated "**Best of 2017**" in the services category by German Industriepreis

2016

- UR3 won the **Control Engineering 2016 Engineers' Choice Awards** program in the Motion Control category
- China Robot Industry's Oscar. "**GG Robot Cobot Segment Technology Innovative Award**" & "GG Robot Best Innovation Multinational Enterprise Award"
- "**Best Robotics Revolution Award**" at the Electronics Maker event in India

2015

Ranked #25 on MIT Technology Review's list of the **50 Smartest Companies 2015**

2014

Received the **Innovation Prize** at the Portuguese EMAF exhibition in Oporto November 2014

2013

- In the US the UR5 robot won the **RoboBusiness 2013 Game Changer Award** in Human-Machine Interaction
- UR5 & UR10 received the **Good Design Award 2013** from the Japan Institute of Design Promotion
- Won the **Gold Award for Innovative Product** on the 12th China (Shandong) International Industrial Automation and Applied Technology Exhibition

2012

"**Invention and Entrepreneurship Award**", awarded by IEEE Robotics, Automation Society and International Federation Robotics (IFR)

2010

England: "MWP Award" for **Best Automation System**

GLOBAL LEADER IN CREATING INNOVATIVE ECOSYSTEM

We are not just providing cobots, but a forerunner in innovative global ecosystem and thereby strengthening our position as a technology leader.



Universal Robots Academy

With the objective of providing learning opportunities on cobot technology to everyone, Universal Robots Academy (UR Academy) is an e-learning platform that delivers hands-on robotics training free of charge. Everyone can learn how to quickly set-up and program a cobot, thus becoming a robot programmer within 90 minutes. The revolutionary move serves to overcome barriers on automation and reduce cobot integration time and costs, increasing the adoption of automation technology.

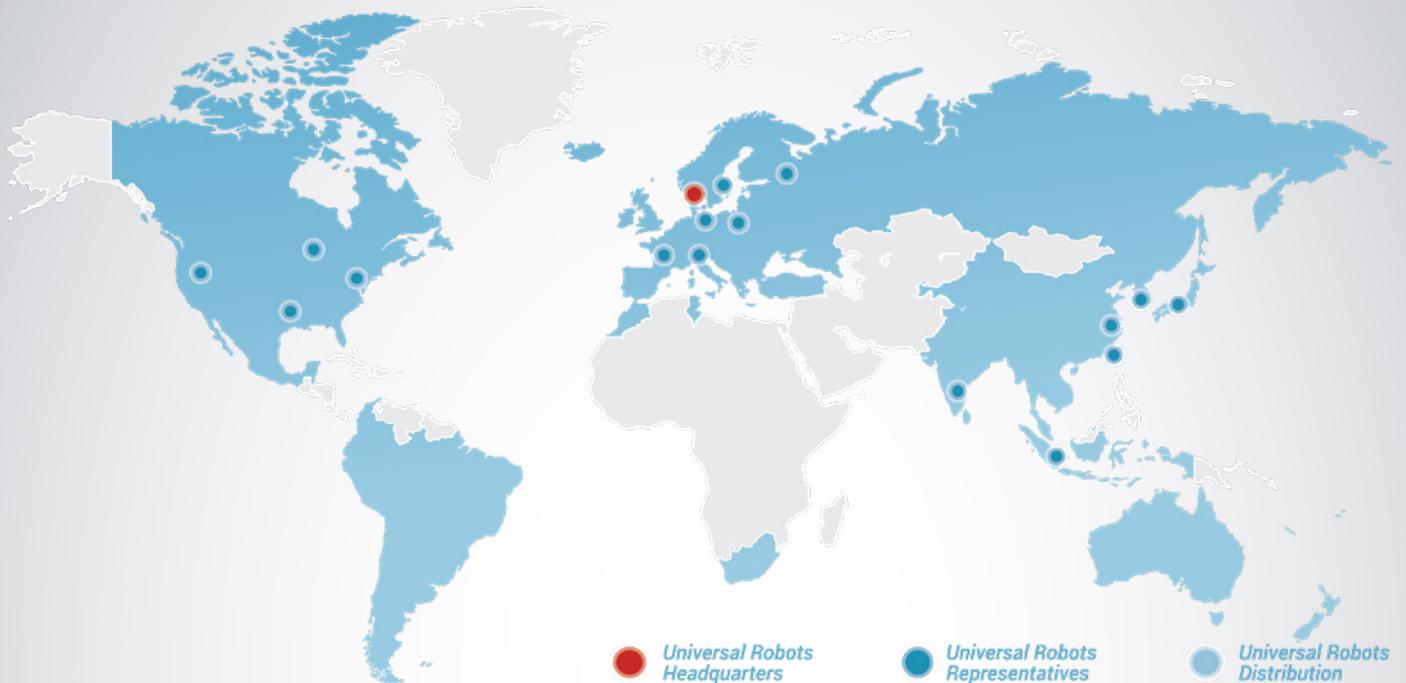


Universal Robots+

Universal Robots (UR+) is a free, online showroom of Plug & Play applications that offers channel partners, developers and end users the most cutting-edge, compatible products to customise UR robot applications seamlessly. You can find everything you need in one place – from end-effectors and accessories to vision cameras and software. All products are tested and approved by UR to integrate with UR cobots, ensuring simple set-up, reliable operations, smoother user experience and easy programming. The result is fast, smooth and low-risk integration.

GLOBAL COVERAGE & CAPABILITIES TO MAKE AUTOMATION ACCESSIBLE TO ALL

Today, more than 21,000 cobots are installed worldwide



400+
Employees

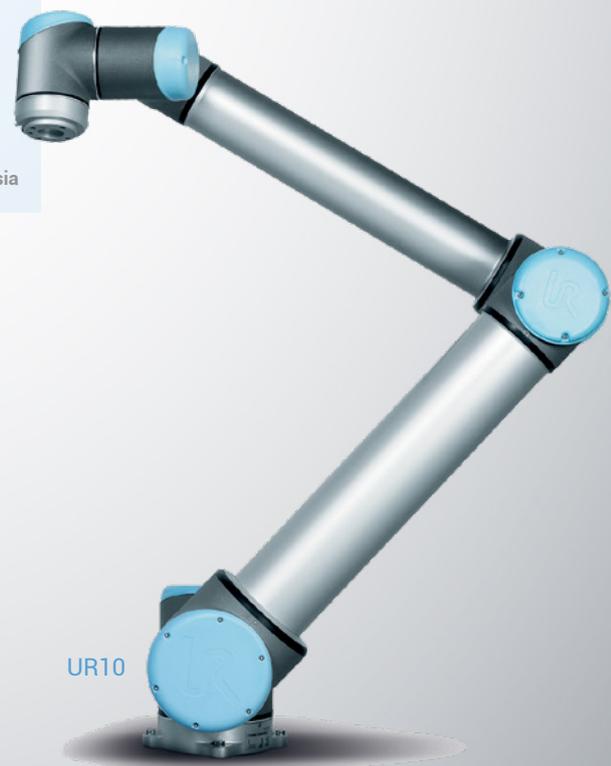
300
Channel Partners

Office in
14 Countries

USD 170 million
in Revenue

"Through the adoption of Universal Robots, we were able to improve production efficiency and our output quality is now more stable. With the move towards automation, our manpower can be redeployed to other processes. We have been able to reduce operational costs by more than USD 80,000 yearly."

Agustinus P. Simanullang, General Manager, Engineering Division, PT JVC Electronics Indonesia



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EN 03/2018