

Automation and Robotics

Technology Report

Vienna, December 2022

Dear readers,

According to various studies, Vienna also scores par-With its Vienna 2030 strategy, the federal capital is fo-In order to fully exploit the potential of its location, the vienna business agency **REACT-EU** ALS TEIL DER REAKTION DER UNION AUF DIE COVID-19-PANDEMIE FINANZIERT.

Vienna is currently home to approximately 9,100 companies in the manufacturing sector, employing more than 170,000 people. Their product offering is broad-based and in addition to goods production, also includes mining and stone and earth extraction, energy supply, water supply, wastewater and waste disposal, elimination of environmental pollution and construction. These manufacturing companies generate a total gross value of approximately €29 billion each year, which corresponds to just under 33 per cent of Vienna's value creation. ticularly high in its power to innovate, comprehensive support of startups and strong focus on sustainability. Vienna is consistently high in the "smart city" rankings. Furthermore, the location is attractive, with its research-friendly and technology-friendly climate, geographic and cultural proximity to growth markets in the east, high-guality infrastructure and educational system, and, last but not least, the highest quality of life worldwide. cusing on those areas where the city is particularly successful, with the aim of providing answers to the major challenges of the coming years - from climate change to digitalisation. The goal is to be among the world's best in six areas within the next 10 years and to develop powerful innovations ("Vienna solutions"). One of the key areas of focus for Vienna is "smart production in the big city". Integrating high-quality digital solutions and using state-of-the-art production technologies has made Vienna's manufacturing companies globally renowned as trendsetters in modern production technologies. Vienna is also setting new international standards in greening production processes and thus assuring an exportable quality of place. Vienna Business Agency functions as an information and cooperation platform for Vienna technology developers. The Agency networks companies with business, scientific and city administration development partners, and supports Viennese companies with targeted funding and a variety of consultancy and support services. This Technology Report provides an overview of the latest trends and developments in automation and robotics and presents some of Vienna's flagship projects and innovators. Your team at the Vienna Business Agency

Automation and Robotics



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○ Intelligent tool

These developments are evident in almost all areas of automation technology application, particularly in robotics. Modern robot systems are no longer just machines that carry out repetitive processes, but they already have certain cognitive abilities themselves that are helping them adapt to individualised tasks and new situations. This is the general trend that will continue into the next decade. We are just getting started in terms of flexibility, adaptivity and understanding, but today we can already solve automation tasks that were unthinkable 10 to 20 years ago. It's a very high-speed evolutionary process.

• The front runner in autonomous driving Autonomous driving is a very good example of how automation technology is developing. Originally, people started to integrate electronic safety and comfort functions such as ABS, ESP and other functions. In recent years, increasingly intelligent support systems have been developed, such as lane departure warning systems, adaptive cruise control, braking assistants, avoidance assistants, lane warning systems and many more.

This step-by-step implementation in the automation of functions ranging from intelligent assistance functions and semi-autonomous functions to autonomous functions are necessary evolutionary steps in technology development and implementation for mastery of the complexity involved.

• Flexible and precise production

A key aspect of intelligent automation is flexibility in production. Today, companies are juggling high mix/low volume production and increasing customer-specific individualisation, while at the same time striving to use as little material and energy as possible, to generally avoid rejects and to reduce emissions to a minimum. Some of these goals are conflicting and can only be tackled if modern automation concepts with real-time optimisation, machine learning and adaptive and learning control algorithms are used in a targeted manner, explains Kugi.

Robotics is also used in areas where it does not offer a major cycle time advantage, but has proven its worth nonetheless: in high-precision processes that require a great deal of attention.

○ Maximum sustainability – use of resources

The underlying goals in automation have changed completely. When the first wave of automation and robotics came to production plants 50 years ago, the chief motivating factor was replacing assembly line work with automation. Today, the aim is to ensure as much resource efficiency as possible in operations. Processes are conducted in a way that maximises flexibility, keeps energy and material consumption low and minimises waste and emissions. Intelligent material separation with applied smart automation is also growing in importance in efforts to produce recycling raw materials more cheaply. Technical solutions that use digital twins to simulate energy consumption and track materials precisely support the efficient use of resources.

1.2 New human-machine interface

Another trend is that humans are playing a much more central role in the application of automation.

Sebastian Schlund from the Human-Machine Interaction research department at the Vienna University of Technology deals with "multimodal interaction", which examines how people communicate with robots, be it via verbal text input, code, graphic interfaces, language and "natural user interfaces" (NUI). His research team is developing systems that enable employees of different skill levels to work with robots, without machine codes where possible.

Furthermore, the "democratisation of robotics" requires more user-friendly communication with machines. "Lightweight arms without a protective fence have the potential to be a universal tool in production and beyond." This requires a high level of specialist operator knowledge and easy access. For this, the operation and interfaces are designed to be as intuitive as possible. In addition, this trend is helping semi-skilled people and career changers handle robots better, thus alleviating the shortage of professionals slightly. The latest development is production increases through fencefree applications.

1.1 New automation

"In automation technology and robotics, we can do things

now that were impossible just a few years ago", says Andre-

as Kugi from the Institute for Automation and Control Engi-

neering (ACIN) at the Vienna University of Technology (TU)

and the Center for Vision, Automation & Control at the Aus-

trian Institute of Technology (AIT) in Vienna. The reasons for

this include the very high computing power for real-time ap-

plications and storage capacities available at relatively cheap

prices. Another driver of this development is the vast improve-

ment in sensor technology, especially in imaging processes.

vironments for driver assistance systems, for example, are

completely different to those from just a few years ago: cam-

era systems, lidar, imaging, radar systems. Developments in

microsystems technology have, however, also produced new, compact, robust and high-resolution sensors that can be

integrated into the smallest of spaces and measure variables such as acceleration, yaw rates, forces, pressures and viscosities during operation. Modern communication technology then allows this data to be linked in real time over large distances. From classic automation logic - signals are detected by sensors, processed in a computer and the systems are then influenced with motors or other actuators - a "higher level of abstraction" has been achieved. Various sensor signals are fused with models and data to capture complex situations. On this basis, algorithms (methods of machine learning and artificial intelligence, real-time optimisation, adaptive and learning control methods, system behaviour prediction) make cognitive decisions on how to specifically intervene in this process in order to produce a certain behaviour.

The systems that are available today for recording en-

1.3 Large and small-scale innovation

According to experts, both large established companies and small young pioneers are behind the trend. "Large industrial companies are extremely active when it comes to new and innovative solutions in industrial manufacturing. Above all, they have the leverage, i.e. the financial resources, to try out and drive such innovations, create references and start using new technologies," explains Johannes Hunschofsky, Managing Director of EIT Manufacturing CLC East. "On the other hand, it is often startups and scale-ups working on well-known industry problems that develop and accelerate technologies in the process." Hunschofsky sees no problems for these two types of companies when it comes to working with the corresponding new technologies. In his opinion, small and medium-sized enterprises (SMEs) in particular suffer from tougher conditions for implementing innovations. Despite the fact that they are often high-tech companies, they have neither the organisational nor the financial resources to implement innovations. EIT Manufacturing is setting up various programmes to provide targeted support for SMEs and help them create relationships with relevant startups and scale-ups.

1.4 Extra: Crosscompany data exchange – Gaia-X

A whole host of production steps, from raw materials to the finished product, involve multiple manufacturers and processors. To achieve the sustainable production that consumers and politicians are calling for, all value chains must be both energy and cost efficient, explains Johannes Hunschofsky (EIT Manufacturing): "This requires enormous amounts of data. It is vital to manage the data in such a way that all companies involved can share the information they need, while protecting sensitive company information from disclosure. The relevant political framework must be created and ideally it must be ensured that the information remains on European soil and under European jurisdiction".

According to the expert, fast data exchange must also be guaranteed for highly networked production chains, regardless of the machine manufacturer and the software used. Eliminating interface problems and "vague data standards" is crucial here.

The European Gaia-X project is one initiative empowering intelligent data exchange. Gaia-X was introduced at the "Digital Summit" in Germany in 2019. Its aim is to "create a powerful and competitive, secure and trustworthy data infrastructure for Europe's businesses". It follows an opensource approach and applies European standards. Owners retain sovereignty over their data. Physically, the data remains on the servers of the owners; the owners themselves decide what data are accessible to others, in what form and in what depth. No data can be copied, forwarded, or downloaded. Gaia-X hubs are being set up in many EU member states to motivate companies to share data and support them in the implementation of specific use cases.

One example of a practical use case for "independent, Al-supported data exchange" is being developed in the Austrian-German Gaia-X lead project "EuProGigant"¹, in which EIT Manufacturing, Vienna University of Technology and companies such as A1 and Plasser & Theurer are involved on the Austrian side.

The Vienna Business Agency is currently actively involved in setting up an Austrian Gaia-X Hub and is offering networking with competent partners and project funding for the implementation of pilot projects.

> 1 euprogigant.com

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2.2 Certifications

According to the experts, take-up by companies is mainly being delayed due to the time-consuming, complex and costly certification processes for cobots - collaborative (industrial) robots that work with people and are not cut off by protective fences. Even if the cobot itself is safe, it does not mean that the intended application is also safe. Employers are not obliged to certify every single application, but bear the risk of responsibility if something happens. Vienna University of Technology is researching how to perform certifications more quickly and easily by integrating human biomechanical limits, such as employee pain and injury limits, in simulations so that fully automatic acceptances can be performed in one simulation, rather than by on-site testing. This facilitates the use of cobots in many areas, including welding, grinding, metalworking and "pick and place" tasks, i.e. as smart placement machines.

2.1 The scramble for talent

"The biggest challenge at the moment is training and finding specialists and assistants," explains Gratzer (Manner). "We currently have 80 vacancies. Training, recruiting and retaining unskilled and professionals is therefore of the utmost importance for Manner at present."

"The fact is that today we have demand X and supply Y, which do not match," says Johannes Hunschofsky (EIT Manufacturing): "On a positive note, this gives us a world of opportunities." As a result of automation, the demands on production employee training are increasing rapidly, and are not decreasing, as is often assumed. This is because machines are becoming more and more complex and expensive. The demand for gualified employees in the industry is high and supports the automation trend. There is massive pressure to automate certain tasks at great expense because professionals can no longer be found in certain areas. In addition, intelligent support functions are required to help those who maintain operations use the machines as easily as possible and significantly reduce training times."

However, this also opens up an additional market where automation and robotics are made more widely available and new business models can be used. This makes innovative technology easily accessible to small and medium-sized enterprises (SMEs). Not every company has to hire highly specialised and trained automation specialists to make use of the technologies. Instead, they can buy this know-how as an external service.

The experts agree that Vienna is a good location for research, development and innovative production. The city is attractive to young, well-educated people from Germany and abroad.

"From an international perspective, we are very well-positioned at the Institute for Automation and Control Engineering (ACIN) at the Vienna University of Technology in the field of automation and robotics, and we are also supercritical in size, which means we can have a say in some areas," explains Andreas Kugi (Vienna University of Technology, AIT). "And we have the Center for Vision Automation & Control at AIT. which is also based in Vienna." A total of over 200 people at these two institutions are focusing on this issue. There is close cooperation with Alstom, Andritz, Frequentis, Hörbiger and TTTech, among others. Festo finances its own research laboratory at the Vienna University of Technology.

The increasing complexity of production and the increasing number of different technologies that are being used, as well as the individualisation of product configurations, require cross-technology thinking and training, plus experts who understand these phenomena. Vienna's universities and technical colleges make it ideally placed for this, and it has invested a great deal in production research in recent years, achieving good international visibility.

Location Vienna

Research and educational institutions such as Vienna University of Technology (TU), the University of Applied Sciences (FH) Technikum Vienna and organisations such as the AIT Austrian Institute of Technology, the CDP Austrian Center for Digital Production and Fraunhofer Austria play an important role in new developments in intelligent automation and robotics in the capital. There are also a range of companies that are highly committed to promoting this sector and implementing innovations. These include:

4.

4.1 EVVA champions "sustainability at all levels"

The family company EVVA Sicherheitstechnologie GmbH, founded in 1919, specialises in mechanical and electronic access systems. Its locking systems have already been fitted on thousands of buildings. Research, development, production and exports to all parts of the world are performed at the company headquarters in Vienna.

EVVA reports annual increases in productivity, as it takes less time to produce the same quantities and processes can be made more efficient, for example through automatic error detection. As a result, rejects (e.g. in key production) have been steadily reduced in recent years. Uniform IT infrastructures and compatible interfaces are the prerequisite for an optimal flow of information between IT systems and production machines.

One example of an intelligent automation project is the automated calculation of locking system authorisations. The

traditional method for doing this is very time-consuming. The EVVA project "Ariadne" uses AI algorithms and has the task of automating them. The artificial intelligence (AI) is trained, and the program learns to perform the task independently. A production app is used for electronic production control. The app ranks orders by priority. The production staff can instantly and easily report work steps and any problems, such as missing parts, via the app. Collaborative robots (cobots) take over repetitive work steps, such as machining and handling work or product tests in research and development. The test automations reduce four weeks of manual test work to 40 hours, while simultaneously reducing the potential for errors and the release times for new products and product functions.

EVVA intends to network 40 per cent of its machines by 2024, with the positive impact that data volumes can be analysed holistically with AI technologies. Machine learning, neural networks, predictive maintenance, etc. result in maximum guality and error prevention. In addition, the installation of the central control technology software makes production more energy-efficient (electricity, cooling, air pressure). According to initial estimates, savings of 150,000 kWh are possible.

4.2 Blue Danube Robotics – robots get sensitive skin

Blue Danube Robotics is a spin-off from Vienna University of Technology (TU) and was founded in 2013. It specialises in human-robot collaboration safety technologies. A pressure-sensitive safety skin called AIRSKIN was developed, which is mounted directly on robots and grippers. It is filled with air, and the soft elements trigger a stop signal when touched. If a collision occurs, they absorb the forces. AIRSKIN means that standard industrial robots can be used in production without a protective fence. This saves space and enables very flexible automation.

All AIRSKIN production takes place in Austria: from the serial production of skins for common robot models to individual orders for 3D-printed protective elements for picker arms, it's all genuinely "made in Austria" - designed, developed and manufactured right here for customers all over the world.

All robot components, such as grippers, cameras and sensors, must be safe in order to implement complete applications safely. "With AIRSKIN, we are supplying the technology to enable people to use these components in collaborative applications without protective fences," says Blue Danube Robotics.



4.3 Festo – market leader in automation

Festo, a family company headquartered in the German town of Esslingen am Neckar, has had a key branch - Festo Austria – in Vienna since 1959. The company describes itself as an "innovation leader in pneumatic and electric drive technology for factory and process automation and a leading provider of automation technology for over 300,000 customers all over the world". Its new automation solutions are inspired by nature. The BionicFlyingFox, for which the developers examined the fruit bat, combines semi-autonomous flying and motion tracking.

The company is also active in education – for example through its own education fund and issuing experiment boxes to schools. Starting with primary school students, the company kindles their interest in natural sciences and technology with "Leonardino". The company has also established an ultra-modern MotionLab at the Vienna site, where they can tinker with, develop and test technology with customers.

4.4 SmartInspection fully automatic inspections become a reality

Inspections are an important factor in the long-term functionality and efficiency of technical systems. Drones are also increasingly being used professionally in industry, and they are a particularly welcome newcomer in the field of visual inspection, as they help reduce system downtimes and prevent prolonged shutdowns. The inspection of a wind farm, for example, usually requires considerable resources and expense, and working on high and inaccessible systems poses a major safety risk to the personnel deployed.

Smart Inspection's latest innovation is an agile four-legged robotic dog that provides valuable information to maximise plant uptime, improve safety and relieve staff. The robotic dog moves both autonomously and via remote control and navigates its way through unfamiliar terrain with the help of built-in sensors. As a result, it can provide support for repetitive tasks and in potentially dangerous environments. The sensor technology is adapted for each application, whether thermal imaging cameras, LiDAR, zoom cameras or gas sensors: the important data points can be automatically evaluated and visualised in order to derive necessary actions.

4.5 Henkel focusing 4.7 CDP – automation on open innovation and of manufacturing venturing processes

The Eastern Europe headquarters of consumer goods group Henkel are located in Vienna. The company is a regional market leader in laundry & home care, adhesive technologies and beauty care. Henkel products have been sold in Austria for over 135 years. Production has been ongoing at the Vienna site since 1927. Henkel focuses on open innovation and venturing. Henkel is searching for and investing in startups across the world in order to implement digital transformation projects together with them.

Henkel describes its digital twins as an essential building block towards Industry 4.0. Digital twins are digital copies of many Henkel production sites. Sensors on factory systems measure key parameters, creating data points that can be used to optimise processes and detect possible damage and errors at an early stage.

Another essential part of the digitisation of the global The CDP is supported by the Austrian Research Proproduction network is a "digital backbone", i.e. a cloud-based motion Agency and the Vienna Business Agency as part of data platform that connects more than 30 factories worldthe COMET programme. wide in real time. The technology enables benchmarking of the locations and provides tips on how quality and efficiency can be increased. In addition, you can use the DigitalBack-4.8 Prewave – supply boneSystem to achieve the sustainability goals by measuring energy and utility consumption at locations in real time.

4.6 craftworks reduces

Prewave is a Vienna University of Technology spin-off which energy consumption was founded in 2017 and aims to use technology to improve and waste with AI supply chain sustainability. Prewave uses its AI-supported platform to analyse millions of online sources in more than 50 languages to identify risks that could affect supply chains, Viennese company craftworks GmbH develops individual AI, categorise them and address them head-on. The platform big data and software solutions for industrial companies. covers a wide range of supplier risks, including human rights They use the data generated by assets to find inefficiencies issues, sustainability risks and legal compliance in the supply and react automatically, minimising energy consumption or chain. Risk alerts are sent directly to companies, who can liaise with suppliers to resolve issues and mitigate disruptions, somewaste. thing that is now essential as a result of the increasingly stringent supply chain legislation across Europe.

COMET centres of excellence carry out top-level, application-oriented research. They conduct research in areas that are of strategic importance for the Austrian economy and develop solutions for key future issues such as climate protection, digitisation, mobility and health.

The Austrian Center for Digital Production is part of this network and supports companies with digitalisation and automation of discrete manufacturing and production processes.

Here, the needs of SMEs and the tasks that arise from small batch production are the key areas of focus. The competence portfolio ranges from the virtual mapping of products and production systems to the automation of design tasks, machine-to-machine communication including sensor integration, integration with and in IT systems, data science and consideration of socio-economic aspects.

chain monitoring for risk minimisation

4.9 concircle makes supply chains transparent

concircle is an owner-managed consultancy for digitalisation solutions, particularly in the areas of supply chain management, enterprise operations and manufacturing. It focuses on manufacturers in industry. The efficient use of IT creates maximum transparency along the supply chain and thus promotes circular economy synergy effects in all logistical and operational processes. Well-founded process know-how and sufficient industry experience are the basis for understanding production processes quickly and modelling them in the most efficient way. Further development is supported by cooperation with the pilot factory of the Vienna University of Technology.





Current projects funded by Vienna Business Agency

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The key to meeting these requirements lies in a suitable surface functionalisation of the tools with a new type of Ta:C coating. Eifeler is the first company in Austria to integrate this special procedure into an automated production process and thus these special coatings for tool manufacturers and end users in the automotive and aerospace industries, as well as for injection moulders and mould makers.

○ Ramsa Wolf

Ramsa-Wolf is a traditional Austrian mustard manufacturer based in Vienna. The family company was founded in 1926 and is already in its fifth generation. To this day, its "English mustard" is considered the hottest mustard in Austria and is still extremely popular.

The company is building a new, fully automatic filling system with a cap closing and sealing system to produce even more unique products for the Austrian food trade in the future. The machine permits precise filling dosing at different filling quantities, even for different containers. Additionally, the recipe management is digitised and transferred to a modern software-based, database-connected, in-house customer recipe management system for ingredients, nutritional values, intolerances, etc. This makes it possible to automate production processes (e.g. MHD, batch number assignment, production planning) and facilitate complete traceability in crisis management.

The Vienna Business Agency supports Viennese projects with its high power to innovate through funding and free consulting services. Current examples of funded projects in automation and robotics are:

○ Genera Printer GmbH

GENERA has been developing stereolithography-based 3D printing systems for industry and medical engineering since 2015 and is expanding its automated (including post-processing) DLP-based 3D printing system with an automation unit to enable 24/7 production 3D printing for the first time. In addition to the 3D printing system for series production, GENERA will also offer the world's first all-in-one 3D printing system from 2023.

○ Incus GmbH

Incus is a specialist and technology supplier for the additive manufacturing of green parts made of metallic materials. These green parts consist of a small proportion of plastic and have to be debound and sintered in a separate furnace process in order to obtain metallic properties. The company is currently working on an integrated automated solution to expand process capacity with this important step and thus to establish Incus as a provider of holistic manufacturing technology (3D printer, material and sintering) on the market.

○ Eifeler Plasma Coating GmbH

From the field of lightweight materials and plastics, materials which are increasingly difficult to process are being developed, such as glass and carbon fibre composites (GRP or CFRP) and other non-ferrous high-conductivity materials. The processing of laminates, consisting of materials such as GRP, CFRP and cardboard or metal, is particularly challenging, as the tool is exposed to very changeable loading conditions.



6.

Venture capital company offering services to industrial startups

A study by EIT Manufacturing shows that Austria needs long-term strategies with clearly defined goals to improve the situation for its hardware startups. Hardware entrepreneurs need funding beyond the early phase to manage the special transformation phase from prototype to product. Below you can find a selection of investors who have already gained experience with industrial startups or service providers.

COMPANY	DESCRIPTION	WEBSITE
B&C INDUSTRIAL HOLDING B&C INNOVATION INVESTMENTS	B&C Innovation Investments GmbH (BCII) invests in inno- vative growth companies with a technological background that are relevant to industry and thus to the "old economy". BCII investments are aimed at start-up teams that pursue business models with a technological or innovative core and promising growth opportunities. The aim of the BCII is not "only" to support start-up teams with capital, but to network them with established companies and establish them on the market. BCII does not pursue a mandatory exit strategy for its investments. BCII is also open to longer-term partnerships with growth companies, subject to value-en- hancing development.	www.bcgruppe.at
SPEEDINVEST	Speedinvest is a brand of venture capital funds that invests in seed- stage technology startups. The company's pri- mary areas of focus are fintech, marketplaces and deep/ industrial tech. In addition to financial investments, Speed- invest also supports its portfolio companies with its net- work and know-how. Based in San Francisco, Speedinvest also supports portfolio companies entering the US market.	www.speedinvest.com
3VC	3VC is an Austrian VC that invests in selected European tech startups. The target volume for the second-generation fund is EUR €150 million. It supports teams from the GSA and DACH region with internationally scalable business models. The investment focus is software technology such as AI, development tools, deep tech, security, AR/VR, data analytics and digital health.	www.three.vc
ROUND2 CAPITAL	Round2 Capital is a fast-growing European investment fund with €115 million under management. The Vienna- based company is a reliable partner for European scale- ups and companies with digital and sustainable business models. Since its inception in 2017, Round2 Capital has pioneered revenue-based financing in Europe and is active in several European countries, with a focus on Germany, Switzerland, Austria and the Nordics. Round2 Capital has invested in more than 25 different companies to date.	www.round2cap.com
CONSTANTIA NEW BUSINESS	Constantia New Business (CNB) ist eine unabhängige Schwestergesellschaft der Constantia Industries und in- vestiert langfristig in dynamische, innovative Unternehmen in Europa.	www.cnb.capita

Chapter 6, Venture capital company offering services to industrial startups

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Services of the Vienna Business Agency

The objective of the Vienna Business Agency is the continuous development of international competitiveness by support-ing both Vienna-based companies and their innovative strengths, and the sustainable modernization of the city as a business location. To achieve this, the Agency provides free consultations to all entrepreneurs in Vienna on the topics of business creation, business location or expansion, business support and financing. Furthermore, networking contacts in the Viennese economy are also made available.

The Vienna Business Agency supports and helps busi-nesses complete their research and development projects with both individual consulting and monetary funding. Depending on requirements, they will receive information about sponsorships, financing opportunities, possible development partners, research service providers, or research infrastructure, according to their needs.

The Vienna Business Agency sees itself as a network of the Viennese Green Tech & Social Tech industry and supports businesses with consultations, as well with distribution and networking among themselves. Events and workshops on topics from the sustainability sector are held regularly.

Additionally, the Vienna Business Agency helps with company relocations or internationalization services. Assistance is provided to business founders and young entrepreneurs in the start-up area. Free workshops and training sessions on topics of everyday business are offered as well as small, affordable office spaces.

Founders Labs² support aspiring entrepreneurs and founders with a two-month, part-time program to help them get started.

All funding programs of the Vienna Business Agency can be found here: <u>viennabusinessagency.at/funding/programs</u>

2 viennabusinessagency.at/startup-and-grow/lets-talk-founding-1/founders-labs





8.

Companies in Vienna

The alphabetical listing³ on the following pages provides an overview of automation and robotics companies in Vienna.

Companies in the field of automation and robotics

COMPANIES	DESCRIPTION	WEBSITE
PRODUCTION COM OF AUTOMATION	PANIES WITH A HIGH DEGREE	
FRANZ BARTA	Franz Barta combines tradition with forward thinking at its production site in Vienna. For more than 70 years, the company, which has 130 employees, has been producing and selling top-quality transfers all over the world. Devel- oping transfer technologies and designing production systems in-house, Franz Barta GmbH is one of the leading transfer manufacturers worldwide.	<u>www.barta.at</u>
BOEHRINGER INGELHEIM	Part of the German pharmaceutical company Boehringer Ingelheim, the Boehringer Ingelheim Regional Center Vi- enna (RCV for short) has business responsibility for over 30 countries in Central and Eastern Europe and Central Asia. This makes the RCV one of the group's most impor- tant locations. It is also a flagship company in the Austrian capital, employing over 3,000 people, and is the centre of cancer research at Boehringer Ingelheim. Another focus is the development and production of biopharmaceutical drugs.	www.boehringer-ingelheim.at
EVVA	EVVA is a developer and manufacturer of mechanical and electronic access systems. EVVA was founded in Vienna in 1919 and has been a family company ever since. Re- search, development, production and exports to all parts of the world are performed at the company headquarters in Vienna.	www.evva.com
HENKEL	Henkel's Eastern European headquarters is located in Vienna. The company is a regional market leader in laundry & home care, adhesive technologies and beauty care. Hen- kel products have been sold in Austria for over 135 years. Production has been ongoing at the Vienna site since 1927. Henkel's top brands in Austria include Blue Star, Cimsec, Fa, Loctite, Pattex, Persil, Schwarzkopf, Somat and Syoss.	www.henkel.at

3 This list is not intended to be exhaustive.

Chapter 8, Companies in Vienna

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COMPANIES	DESCRIPTION	WEBSITE	COMPANIES	DESCRIPTION	WEBSITE
ISI	iSi GmbH (also known as iSi Group) is an Austrian com- pany for pressurised gas tanks and a world market leader in this field. Founded in Vienna in 1865, the company has also been producing in the USA since the 2000s, has sales locations worldwide and sells its products in over 80 coun- tries. Its product range extends from the preparation of soda water, coffee and whipped cream to heat protection, fire extinguishers, medical engineering, sports equipment	www.isi.com	TAUROB	Taurob develops and offers fully autonomous ground ro- bots for routine work and inspections on industrial sites. Their robots can operate in harsh environmental conditions (e.g. rain, cold, explosive gases) and collect video, audio and sensor data. This data is transmitted in real time to a cloud, where it is further analysed and processed (e.g. to detect gas leaks or corrosion damage).	www.taurob.com
OCTAPHARMA	Octapharma has been family-owned since its founding in 1983 and is one of the largest manufacturers of human protein products. Octapharma's main production site has been in Vienna since 1989 and was quickly expanded into one of the most modern plasma fractionation plants in the world.	www.octapharma.at	TTTECH GROUP	The TTTech Group is a leading provider of secure-net- worked computer platforms that make megatrends such as the Internet of Things or autonomous mobility a reality. Its solutions are used in the automotive industry, mobile machines, aerospace, smart manufacturing and automa- tion. The TTTech Group brings proven network technolo- gy from space and aerospace to mass markets such as the automotive and manufacturing industries.	www.tttech.com
AUTOMATION AND AND SERVICE PRO	ROBOTICS SUPPLIERS VIDERS		WITTMANN GROUP	The WITTMANN Group is the only supplier in the world able to supply all the equipment required for plastic injec- tion moulding. The smooth interaction of processing ma- chine, automation and peripherals is vital for real energy	www.wittmann-group.com
BLUE DANUBE ROBOTICS	Blue Danube Robotics was founded in 2013 and produces safety solutions for human-robot collaboration in mass production. These solutions make robots safe for humans and thus more efficient for companies. The patented AIR- SKIN [®] is a robust, pressure-sensitive skin that is easily and directly mounted on the robot this available for almost	www.airskin.io	RESEARCH INSTITU	efficiency and production reliability in the injection mould- ing process.	
	every robot and application and is the only suitable solution for end of arm tooling (EOAT).		AIT CENTER FOR VISION	The AIT Austrian Institute of Technology is Austria's larg- est non-university research institution. With eight centres	www.ait.ac.at
FESTO	Festo is an internationally leading company in automation technology and a world market leader in technical training and further education. It has been present in Vienna for over 60 years and, with the Motion Lab, has recently been offering an ideal platform for developing ideas and building and testing applications.	www.festo.com/at	CONTROL	ly specialised research and development partner for in- dustry and is engaged in the central infrastructure issues of the future. At the Center for Vision Automation and Control, around 100 experts are conducting research in image processing, sensor data fusion, machine learning, data analytics, mathematical modelling for real-time ap- plications, process automation, system analysis, and the control, regulation and optimisation of complex dynamic	
SIEMENS	Siemens has been a byword for technical performance, innovation, quality, reliability and internationality in Austria for over 140 years. Siemens Austria is one of the leading	www.new.siemens.com/at		systems and processes.	
	technology companies in the country. Around 8,900 peo- ple work for Siemens in Austria. At the central research and development unit Corporate Technology (CT) in Aus- tria, seven research groups are working on pioneering technology solutions. The unit is strongly represented in the Austrian pilot factories.		AUSTRIAN CENTER FOR DIGITAL PRODUCTION	I ne Austrian Center for Digital Production supports com- panies with digitalisation and automation of discrete man- ufacturing and production processes. A special focus is placed on the needs of SMEs and the tasks that result from the processing of small batch sizes. The competence portfolio includes virtual mapping of products and produc- tion systems, automation of design tasks, machine-to-ma- chine communication, including sensor integration and integration with IT systems and in IT systems, all with due consideration of socio-economic aspects.	<u>www.acdp.at</u>

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NIES	DESCRIPTION	WEBSITE
ECHNIKUM	FH Technikum is Austria's university of applied sciences for technology and digitisation. More than 4,500 students are currently studying to become top executives across 30 bachelor's and master's courses. Research and devel- opment priorities include embedded & cyberphysical sys- toms and automation & robotics	www.technikum-wien.at
VIENNA UNIVERSITY OF TECHNOLOGY – ACIN	DThe Institute for Automation and Control Engineering (ACIN) is part of the Faculty of Electrical Engineering and Information Technology at Vienna University of Technolo- gy. With more than 70 employees, the Institute conducts basic research, solves challenging practical problems in	www.acin.tuwien.ac.at
	a large number of industrial cooperation projects, develops innovations and provides students with well-founded, re- search-led teaching in the field of systems and automation technology. The institute is divided into two research ar- eas: advanced mechatronic systems and complex dynam- ic systems.	
'IENNA UNIVERSITY OF 'ECHNOLOGY – IFT	Research at the Institute for Manufacturing Technology and Photonic Technologies at Vienna University of Tech- nology deals with the development of innovative manufac- turing processes and the machine technologies and pro- duction systems required for this. This makes the IFT one of Austria's most important locations for manufacturing research. In 2016, the Institute – one of the oldest in this field worldwide – celebrated its 200th anniversary.	www.ift.at
NEW PLAYERS AN	D STARTUPS	
CRAFTWORKS	craftworks develops individual AI and software solutions for predictive quality and maintenance in industrial com- panies. It uses plant-generated data to anticipate failures, react automatically and thus increase efficiency.	www.craftworks.ai
D-ARIA	D-Aria bietet Lösungen zur mobilen Datenakquisition. Mit- tels Drohnen und unterstützt durch Künstliche Intelligenz können diese als Werkzeug in betriebliche Abläufe integ- riert werden. Erhebung von Lagerbeständen und vieles mehr sind als Einsatzgebiet möglich.	www.d-aria.at
INCUS	Incus ist auf die additive Fertigung von metallischen Werk- stoffen spezialisiert und bietet einen neuartigen automa-	www.incus3d.com

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The Project "Fit für die Zukunft" contributes to the development of corporate research and innovation activities in Vienna, encourages cooperation and awakes enthusiasm for research and innovation among young Viennese. Additional information on the IWB/EFRE funding programme.

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