Industries transforming our world

INNOVATORS MAGAZINE

European Innovation Summit, Brussels
November 2017

EU TOP 50 STARTUPS

Bertrand Piccard's 1000 solutions

IEEE Entrepreneurship

Engineering-driven startups community

IDEAS
INNOVATION
INSPIRATION

Creating a space for tech entrepreneurs to learn from one another, share their experiences, and discuss what drives them to advance technology for the benefit of humanity.

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Welcome

Innovators Magazine is delighted to be part of the European Innovation Summit's inaugural EU Top 50 (EU50) Startups platform.

Summit organisers, Knowledge4Innovation,(K4I), launched EU50 this year, in partnership with IncubatorEurope and Glowfly.

The millennial startup competition has attracted game-changers from across the continent; young companies which K4I Managing Director, Dr Roland Strauss, said are 'leveraging technology to build disruptive solutions that meet Europe's most pressing challenges'.

All 50 are showcased in this special edition, which also features an exclusive interview with Bertrand Piccard, the record-breaking Swiss pioneer who has a rather impressive resume when it comes to bringing disruptive solutions to the world. He is also the keynote speaker at the EU50 Startups Convention, being held as part of the Summit programme.

Writing about the support startups can access via the European Innovation Council (EIC), European Commissioner for Research, Science and Innovation, Carlos Moedas, gives context to the strategies underpinning the continent's powerful startup ecosystem.

Enjoy the Summit.

Iain Robertson

Editor

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‘Game-changer *for our game-changers’*

“Europe has a unique chance to become a global leader in innovation provided we start doing what we were talking about for years: making innovation the top priority, facilitating open access to our broad knowledge base, exploiting the potential of synergies, allowing entrepreneurs to take risk, fail and start again, finding ways to sustain growth of high potentials to become global market leaders.”

Roland Strauss, Managing Director, Knowledge 4 Innovation

Carlos Moedas, European Commissioner for Research, Science and Innovation

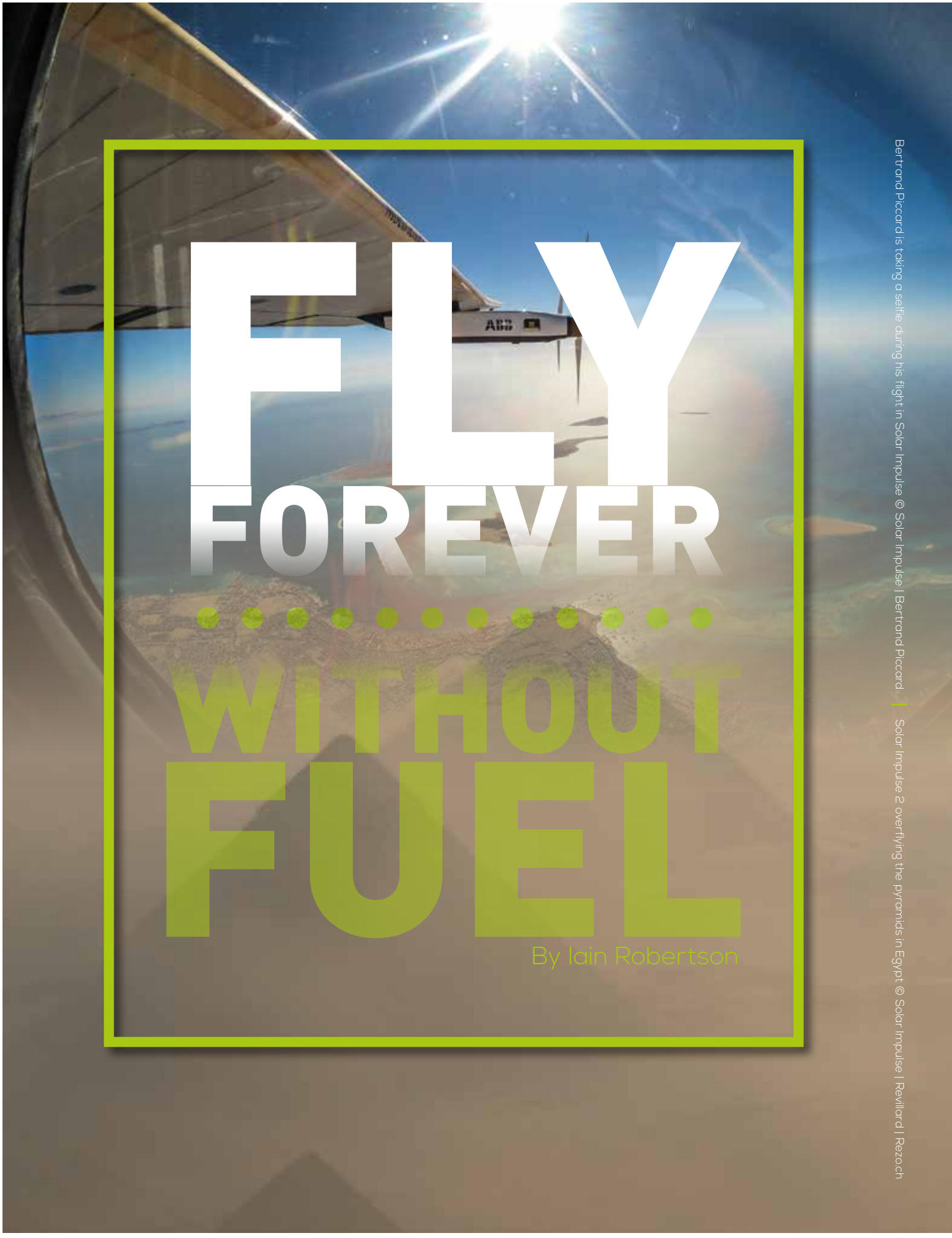
Europe is strong in many areas crucial to our ability to succeed in this emerging future: world class science, an abundance of talent and ideas, openness and diversity, strong industrial capabilities and a collaborative and multi-disciplinary approach to research, development and innovation.

But too few innovative firms in Europe succeed in scaling up to become major employers and market leaders. Many startups don't make it beyond the critical first few years, can't get the finance to scale up into global businesses, or they try their luck in a third country.

Our €77 billion Horizon 2020 programme is making impressive strides in coupling excellent research with innovation. But I believe there is still more we can do to generate greater impact from taxpayers' investment. We need to make reforms so that we support our top innovators who have the ambition, resilience and capability to create and capture new markets. This is where the European Innovation Council (EIC) comes in, as a means of streamlining EU level funding with a clear focus on supporting breakthrough, market-creating innovation and boosting the effectiveness of the innovation ecosystem.

The €2.7 billion first phase of the EIC which we have just launched, focuses on support for innovative firms and entrepreneurs with the potential to scale up their businesses rapidly at the European and global levels. A main feature is a fully bottom-up SME instrument allowing applicants freedom from thematic restrictions, a proposal evaluation system that introduces for the first time face to face interviews with a jury of innovation and finance experts and enhanced coaching and mentoring support. Blended finance (grants combined with loans) will also be trialled.

I am confident that the EIC will provide an excellent opportunity for all the startups that are participating in the EU Top 50 startups competition and that it will become a 'game-changer for our game-changers'. I'm sure this year's European Innovation Summit will again contribute to the on-going discussions that shape our European research and innovation landscape.

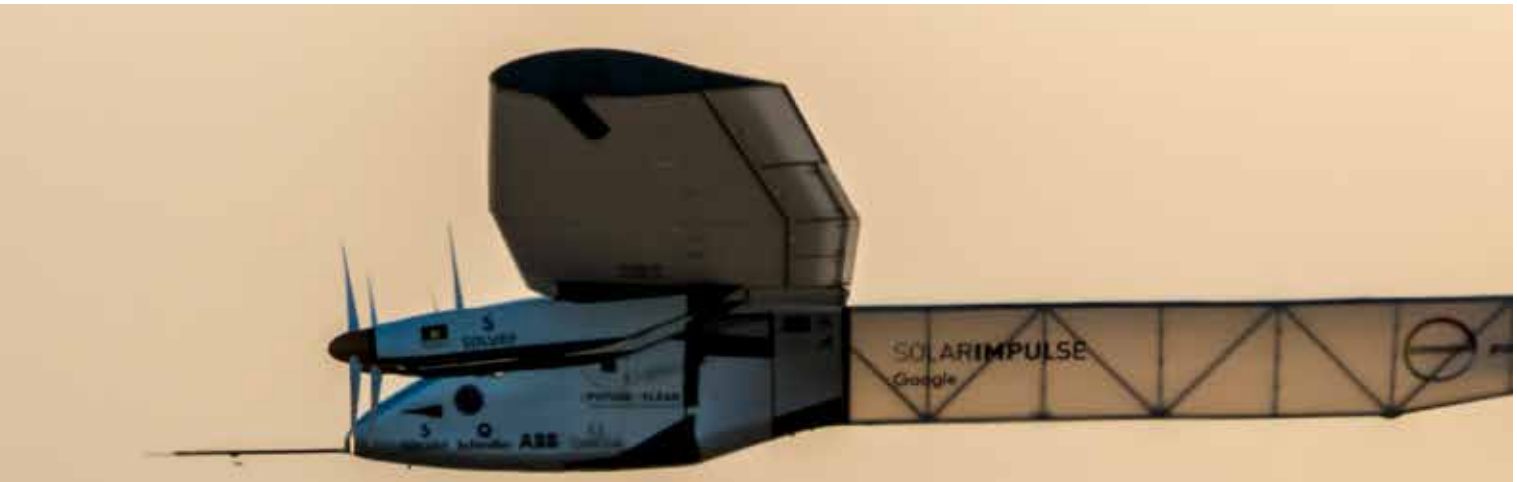


FLY FOREVER WITHOUT FUEL

By Iain Robertson

Bertrand Piccard is taking a selfie during his flight in Solar Impulse © Solar Impulse | Bertrand Piccard

Solar Impulse 2 overflying the pyramids in Egypt © Solar Impulse | Revilard | Rezo.ch



Bertrand Piccard © Solar Impulse Revillard Rezo.ch

© Solar Impulse Revillard | Rezo.ch

"You innovate when you understand the paradigm that prevents you from moving ahead, and you get rid of this paradigm."

Bertrand Piccard says startups must prioritise good communication if they want to push their innovations to market.

Speaking to Innovators Magazine for this special edition showcasing the European Innovation Summit's inaugural EU Top 50 Startups event, where he is giving the keynote speech, the 'serial pioneer' has a clear message to the young innovators taking part: 'success will come from good communication.'

Words of advice from a man with a strong record of doing just that, and with real impact. In 2016, Bertrand successfully communicated the epic potential of clean technologies, when he piloted the first ever round-the-world solar flight, alongside co-pilot André Borschberg, in the history-making Solar Impulse plane.

"The Solar Impulse flight showed the world that it is possible to push the limits of technology in order to build the foundation for a sustainable future," said Ban Ki-moon, who was then United Nations Secretary-General.

1000 solutions

And now Bertrand is heading around the world again – this time with 1000 solutions that can 'protect the environment in a profitable way'.

Launched at this month's UN Climate Change Conference (COP23) in Bonn - via the Solar Impulse Foundation, which Bertrand is the Initiator and Chairman of, the World Alliance for Efficient Solutions (World Alliance) will select and promote 1000 solutions that can help contribute to international climate targets.

"I want to select the best 1000 solutions and go around the world again - not with a solar plane but with a catalogue of solutions. I want to take them to governments, heads of state, to parliamentarians who have to make legislation, and to institutions and big corporations. It will show them what exists today and make clear they can be much more ambitious in the targets they want to reach," Bertrand said.

To do this effectively, he will communicate to decision-makers, in governments and industry, in a language they can understand, which is simply that profit and ecology go hand-in-hand.

"Heads of state all tell me that the main problem is inertia; the difficulty to move things. And that ecology isn't enough, as you have too much resistance from industry."

He continued: "What you need is to have the politicians owning the solutions, so they know which are the best solutions for their country; what is profitable, what can create jobs, and then they can incorporate it into their political programme. They are then in a position to say - look, we are going to do this because it will create jobs, it will make profit, it will sustain growth."

"Even for climate change deniers, it will be logical to use these solutions," Bertrand added.

And it is this criteria, the combination of economy and ecology, that an expert panel will use to rigorously assess the

Roland Strauss (K41) and Bertrand Piccard at COP23, Bonn

suitability of each solution.

"I want to bring key people together, into the World Alliance: startups, companies, institutions and organisations that are producing, implementing or supporting the use of clean technologies, and offer them – free of charge – access to these independent experts – who give credibility to each solution," he said.

Solutions Bertrand says already exist.

"I think there are a lot of people everywhere in the world; in startups, in universities, in research labs and even big corporations, with one or several solutions that are profitable and can protect the environment, but they are not known about, people have no idea that they exist."

All 1000 will be presented at COP24 in Poland next year.

European startups show the way

A number of game-changing innovations stemming from European startups have caught Bertrand's eye in recent weeks.

"One startup in Europe has invented a system of solar cells, to simultaneously produce heat and electricity," he said. "Until now you had only thermal solar, or photovoltaic solar, and it combines the two; so on the same surface you can produce heat and electricity."

Another young company which impressed him, is advancing a product within the rapidly growing electric vehicle market.

Bertrand continued: "This company has invented an additional power unit that you hook to your electric car, that allows you to travel an additional 600km. And you rent it, you don't need to buy it. So you can have your little electric car for the city, which you use during the week, then at the weekend - when you want to go on a break - you rent the little trailer to give you the additional range you need for your electric car. This is really interesting."

Creating amazing products is only one part of the equation though, their value must also be properly communicated to the right audiences.

"What I want to say to the startups, all the people gathered for the EU Top 50, all the innovators – they have to work on the political level, they have to promote themselves, they have to speak of profit, not only ecology," Bertrand said.

"And we need to help them market themselves better. This is what people miss when they are innovators, the marketing part. They are very good scientifically but they don't know how to communicate. And today lots of the success will come from communication. By becoming better known, better respected; they can bring their solutions to the market. This is where the World Alliance can help them because all our strike force is in communication; it is in the media; it is in the relationships we have with governments."

Think differently

And on a personal level, Bertrand added that those who want to help accelerate the shift to a sustainable world, have to find ways of approaching challenges from different angles.

"What we have to do is to learn to think differently," he said. "I believe that we have to understand that, as human beings - or even companies, we are prisoners of what we have learned to do. We are prisoners of our habits, prisoners of the paradigms that we believe are so strong and important."

To break free of these shackles, Bertrand urges innovators to ditch paradigms that stop them moving forward.

"For me innovation is not when you have a new idea. Innovation is when you get rid of all substitutes, all beliefs, and this is how you can innovate. You don't innovate with a new idea, you innovate when you understand the paradigm that prevents you from moving ahead, and you get rid of this paradigm."

He added: "When I initiated Solar Impulse, the paradigm was that you can never fly longer than the 20 days that I did with my balloon around the world, because after 20 days – which was a long flight – you have no fuel, so you cannot continue. So you think 'OK we can never progress, we can never get better' but that's wrong. The paradigm is you have the fuel and you fly as long as you have the fuel. So to change the paradigm you need to stop having fuel. And Solar Impulse is a plane that changed the paradigm and flew with no fuel, and could actually fly forever."

Selecting #1000solutions that protect the environment in a profitable way.

"Thousands of solutions exist that can boost economic growth while preserving nature, but they are hidden in start-ups or research labs, remain unknown to decision makers and are not implemented at industry level. We need to embrace clean technologies and efficient solutions and rethink the way we produce and use energy in order to be logical, not just eco-logical."

Dr. Bertrand Piccard, Initiator and Chairman of the Solar Impulse Foundation

The #1000solutions Portfolio will be presented during COP24, in 2018

A GLOBAL STRIKE FORCE...

Bringing together members in the field of clean technologies to create synergies, facilitate matchmaking between solution providers and investors, and showcase clean and profitable solutions that have the potential to address today's environmental challenges.

TO EMPOWER EFFICIENT SOLUTIONS

From federating to appraising: the World Alliance assesses – entirely free of charge – the deployability, sustainability and viability of the solutions submitted by its Members. This assessment will guide the selection of 1000 labelled Efficient Solutions to bring to political and corporate decision-makers, helping them adopt more ambitious environmental targets and energy policies.

SIGNUP.SOLARIMPULSE.COM
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EU TOP 50
START UPS

EU TOP 50 START UPS

Seed-stage founders could impact your future?

Imagine how important every second is when you have a heart attack, or consider the implications of a world run entirely on renewable energy. If you thought Blockchain technology would only impact finance; think again. From detecting cardiac arrest with 95% accuracy to solving energy problems in the year 2050 by growing power grids made of plants, European entrepreneurs are taking a bold stance on the applications of Blockchain, Robotics, Machine Learning and Artificial Intelligence, driving the future of tech in Europe.

For the past few months, we have been recruiting Europe's most promising millennial founders who are leveraging technology to build scalable solutions, addressing our most pressing challenges. Europe has no shortage of potential, and entrepreneurship and innovation are vehicles by which to create true progress. It is our collective responsibility to rally behind these young founders and support them in bringing high impact solutions to market. We hope you join us on this journey!

The EU top 50 winners will pitch their ventures at The Hemicycle Startup Convention in the plenary room of the European Parliament – the place where most important decisions for Europe's future are taken.

Will these founders succeed at building a brighter Europe? They certainly are not afraid to dream big and work hard.

On behalf of the EU top 50 Team,
Karolina Stawinska, Glowfly &
Roland Strauss, Knowledge4Innovation

INCUBATOR EUROPE

knowledge4innovation

glowfly

EU TOP 50
START UPS

01

Did you know that you could power up your whole house with your own garden?

Company	Co-founders	Location
BIOO	Pablo Vidarte (21) and Javier Rodríguez (21)	Spain

What if our forests could become the energy stations of the future? Bioo is a clean-tech company capable of generating electricity from plant's photosynthesis. Their mission is to turn forests into future energy stations. With nearly 8000 customers joining their movement they are leading a green revolution in which plants will provide the most sustainable and competitive energy source charging our cities in the future .

02

Did you know farmers can lose up to 25% of their annual production to birds?

Company	Co-founders	Location
BIRD CONTROL GROUP	Steinar Henskes (26) and Tim Sprang (28)	Netherlands

Bird Control Group provides innovative products to keep birds at a distance from commercial activities, ensuring a safer working environment and a highly effective way of damage prevention. Steinar's laser technology solves the conflict between humans and birds in more than 75 countries around the world. His customers include large multinationals, airports and governments. Steinar's animal friendly solutions have been recognized by the World Wildlife Fund.

03

“Did you know that up to 40% of kids need professional help with speech and language development? –Mitja

Company	Co-Founder	Location
BLUB BLUB	Jernej Fuzir (23)	Slovenia

Speech Blubs is a powerful app that has been used over 150,000 times to trigger sounds and words in toddlers, late talkers, children with Apraxia, Autism, Down Syndrome, ADHD and SPD. Blub Blub uses voice activation and facial recognition using a video-modeling teaching method triggering children’s mirror neurons. Within 3 months Mitja has gained over 2000 paid subscribers and over 3000 therapists are using his app in schools and clinics turning Speech Blubs into number 1 speech therapy app in the US.

04

“Did you know that Ocean Thermal Energy could take us to 100% renewable-energy? – Berend Jan

Company	Founder	Location
BLUERISE	Berend Jan Kleute (31), Co-founder	Netherlands

Bluerise is creating an energy breakthrough by generating utility scale electricity through Ocean Thermal Energy Conversion. Ocean thermal energy is alargely untapped resource,and one of the world’s largest renewable energy sources. It will be able to outcompete fossil fuel based generation and other renewables that require storage and grid balancing. It will play a crucial role in the future energy mix being one of the very few constant energy sources, available day and night, year-round. Its development can create an energy breakthrough in which Europe can play a significant role. Together with its partners Bluerise is working on projects in Curacao, Jamaica, Colombia, Sri Lanka and Indonesia and plans to approach all 100 countries with access to the Ocean Thermal Energy in the tropics.

EU TOP 50
START UPS

05

Company
BOUND4BLUE
Location
Spain

Cargo vessels emissions represent a huge environmental challenge severely impacting public health, but they also have a massive internal problem as fuel represents up to 80% of their operating costs. bound4blue's wingsail system offers a complete solution to these challenges: 30% of fuel savings and significant pollution emissions reduction. bound4blue's highly innovative concept brings aviation technology to the shipping industry, via their patented new foldable wingsail designed specifically for assisted clean propulsion of vessels. As a result, bound4blue's wingsails thrust capacity is ten times higher than that of traditional sails and existing novel designs. The system is suitable for a wide range of vessels: from fishing and recreational vessels to large merchant vessels. Their key solution is completed with a user friendly automated control system and a route optimization software which brings further fuel savings. bound4blue has been incubated by the European Space Agency, closed two investment rounds and have been awarded 4 public research grants. The startup is ready to go to market in 2018 and predicts to make up to 40 Million in revenue in the first 5 years.

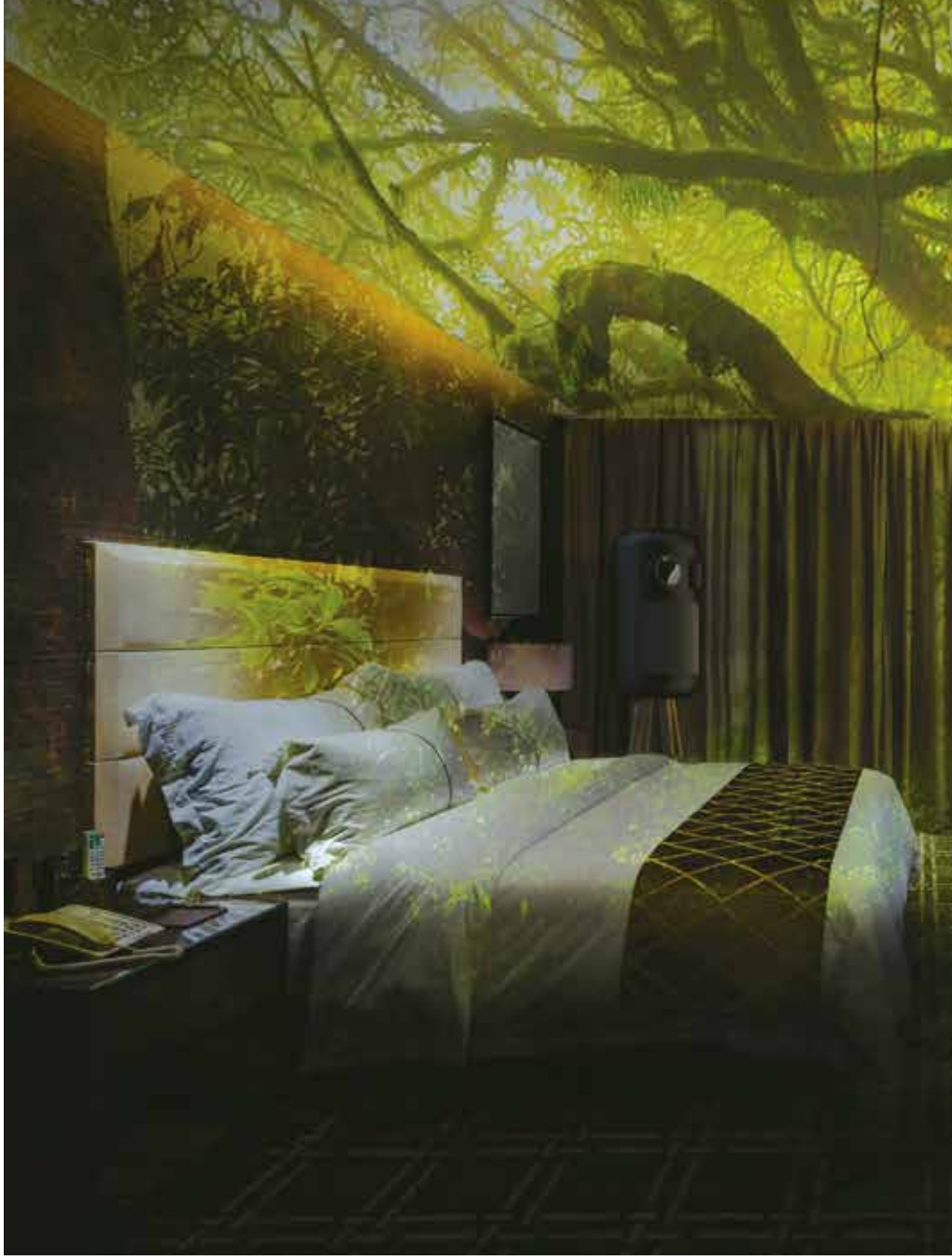
06

Company
BREEZE TECHNOLOGIES
Location
Germany

Air pollution is now the single biggest environmental health threat of our time. It kills nearly seven million people per year, and even in less affected regions effects are enormous: For example, the productivity of white-collar workers decreases by up to 50% in offices with bad air quality. Air quality data has so far been sparse, yet you cannot effectively manage what you cannot measure. Breeze Technologies provides integrated, hyperlocal and real-time air quality data enabled through sensors up to 1.000 times cheaper and 50.000 times smaller than the industry standard. Working with various multinational partners, Breeze supports data-based interventions, policy planning and implementation through a self-learning environmental intelligence platform.

Did you know?
that the shipping industry generates as much CO2 as the 6th most polluting country in the world?

BOUND4BLUE



07

Company
BRILL POWER
Location
United Kingdom

In a world where batteries are everywhere, and the cost to make them is huge, it's essential to get the most out of every battery. Brill Power addresses the problem of battery aging and degradation in stationary storage and electric vehicle applications. They develop cutting-edge intelligent battery pack management and control technology that allows accessing the full potential of every individual lithium-ion cell. Brill Power's patent pending cell management solution can extend the lifetime of a conventional battery pack by up to 60%, while largely improving its resilience to unexpected failure of individual lithium-ion cells. By 2022, Brill Power expect that their sales alone will offset 2.3 million tons of CO2 equivalents.

08

Company
BROOMX TECHNOLOGIES
Location
Spain

Broomx Technologies provide live immersive 4D experiences in physical spaces at a consumer price-point. Mixing technology and creativity, they have created a unique device called MK Player360 that allows users to enjoy VR experiences socially without glasses or headsets. This patented technology, created with the philosophy of being all-in-one & plug&play, can be brought to any room or corner and, once it's set up, the user can control the system via a smartphone app and have their entire field of vision covered by standard VR & 360º projections. With partners ranging from multinationals in the electronics industry to hotel resorts, their technology has a huge impact on various industries including education, health and tourism. This technology has initiated their journey and has been used among others to treat depression and anxiety disorders, to enforce climate change awareness, to create learning tools for students or to enhance the quality of life for people who are hospitalised, creating a virtual window to the world.

09

Company
CERA HEALTH

Location
United Kingdom

Cera is a technology-enabled home care provider looking to transform the elderly care market. They have provided over 100,000 hours of care with a 99% satisfaction rating, and have partnered with the NHS to deliver home care across a population of 5 million people. Through their matching algorithm and automated scheduling systems they were able to arrange home care within 24 hours, while still taking into consideration a patient's needs and preferences. They were also able to take a lower margin so they could pay their carers 50% higher than the industry average. This results in recruitment of experienced, capable carers who are well trained and provide the highest quality of care. They are the best rated care provider across three user satisfaction platforms, and have been recognised by the UK Government's Cabinet Office as a role model for partnering with the public sector.

10

Company
CODEBERRY

Location
Hungary

There is a huge demand for developers in Europe, yet most IT education is solely available in English. With 24 official languages spoken in Europe alone, it's no surprise that non-native English speakers prefer to learn in their own language. CodeBerry is building the largest non-English speaking programming school in the world. The platform offers hands-on education in web development technologies in the students' mother tongue and simultaneously serves as a recruitment platform to land them new IT jobs. Codeberry has gained quick traction with over 25.000 users, from that 1,500 paying customers so far and over 400.000 completed assignments. The target market for CodeBerry includes 13M people with a total of $1.3B value. The number of developers in these countries is expected to rise from 16M to 24M (+67%) in the next 4 years. Their goal is to expand to 20 countries by the end of 2018.

> **You can learn programming in only 4 months.**

EU TOP 50 START UPS

11

Company
CRIAM
Location
Portugal
Founders
Vitor Crespo, Ana Ferraz and Filipe Quinaz

Do you know your blood type? Every second someone in the world needs a blood transfusion, which poses a huge challenge in an emergency situation as only a compatible blood type can be used. To make things more difficult, blood type tests in this environment take more than 60 minutes even in optimal situations. CRIAM has designed a portable medical device that can quickly determine someone's blood type in 3 minutes. Their patented technology uses machine learning and computer vision increasing medical efficiency and saving lives. This technology will also allow CRIAM to detect diseases in a Point of Care environment.

Did you know

that emergency departments funnel 250 million calls into the hospital system and one in six people are misdiagnosed each year?

12

Company
CORTI.AI
Location
Denmark

Medical professionals are expected to process an unprecedented variety of expert knowledge and as a result 1 in 6 patients is misdiagnosed each year. Corti is a machine learning company that uses auto-speech recognition (ASR) to provide live diagnostic aid during emergency calls, at a patients very first contact with the healthcare system. Corti provides more accurate diagnostic advice to emergency service personnel, allowing patients to get the right treatment, faster. To put this into perspective, Corti is able to diagnose cardiac arrest with up to 95% accuracy in less than 50 seconds. Corti's technology is democratizing medical expertise worldwide. The Danish Emergency Medical Services (EMS) are already using their technology, and they have successfully deployed it in Australia and the US. They expect to reach 100 new EMS customers by 2018.

EU TOP 50 START UPS

ISTOCK

“
The better people feel in their building environment, the better they work, learn, shop and enjoy themselves
ENERBRAIN

ENERBRAIN

13 Company
EDURIO
Location
Latvia

Edurio helps over 600 schools and education agencies continuously monitor education quality, with a deep focus on non-academic indicators such as school climate and culture, student and staff perception and stakeholder engagement. The global shift of focus from a knowledge-based education to that of developing skills and competencies, shows that the importance of non-academic indicators of education quality is growing in every education system. With over 9000 teachers and 85000 students registered on their platform they have been able to gather over 7 million survey responses providing access to important data that is crucial for education reform.

14 Company
ENERBRAIN
Location
Italy

The better people feel in their building environment, the better they work, learn, shop and enjoy themselves. Enerbrain turns buildings into sustainable, economical and social assets. Theit IoT solution "Energy Cloud" consists of air quality sensors, a cloud platform that receives e era crane that packs up into the size of your carry- on luggage. Fotokite creates self-flying aerial robotics tools for Public safety, Broadcast, and Sports markets that provide real-time video for 24+ hours of continuous flight. Firefighters & Public Safety teams can use the system for immediate aerial situational awareness. Fotokite has a patented technology that is a major step ahead of traditional drones and is devoted to making autonomous robotics an everyday thing. The technology has been adopted by BBC, AFP, CNN, Tribune Media, and many more.

"Did you know that 20 million people in Europe suffer from a visual impairment? –Peter

15 Company
EVA Vision
Location
Hungary

EVA is a voice controlled wearable AI assistant for the visually impaired. EVA's Artificial Intelligence recognises objects, texts, and signs and verbally describes what it sees relentlessly scanning and analysing your surrounding. She can handle your incoming phone calls, read your emails, help you compose a reply or assist you in finding your way home. EVA is currently building a functional wearable prototype and is eager to start user acceptance trials in many European cities.

16 Company
EXOVITE
Location
Spain

Exovite optimizes the treatment of musculoskeletal injuries and has been developing solutions for the past 3 years to improve the treatment of fractured and broken bones. Their first product; the Exoscan, is a 3D scanner capable of capturing the exact image of the patient's limb, and using an exclusive software, it generates a personalized splint which is 3D printed within 5 minutes. The splint is 75% lighter than a conventional plaster cast, is waterproof and made from skin-friendly material. It is printed directly in the hospital so it reduces medical costs and the design and material of the splint allows for maximum comfort for the patient.

EU TOP 50 START UPS

17 Company FOTOKITE Location Switzerland

Imagine a 100m camera crane that packs up into the size of your carry-on luggage. Fotokite creates self-flying aerial robotics tools for Public safety, Broadcast, and Sports markets that provide real-time video for 24+ hours of continuous flight. Firefighters & Public Safety teams can use the system for immediate aerial situational awareness. Fotokite has a patented technology that is a major step ahead of traditional drones and is devoted to making autonomous robotics an everyday thing. The technology has been adopted by BBC, AFP, CNN, Tribune Media, and many more.

18 Company GETUNIVERSE Location Finland

70 % of the employees are unhappy with their current intranets. Companies are eagerly looking for a new solution to engage employees and make their company more efficient. Universe's mission is to make large companies efficient again. Universe is the next generation digital workplace platform for enterprises improving communication efficiency up to +200%. They combine collaboration softwares under the same platform in a modern way. Already with 180,000+ installed users, they are trusted by companies such as Rovio, also known as 'the AngryBirds company'.

19 Company GLEECHI Location Sweden

Gleechi's software solutions enables hand interaction between humans, computers and robots. Their technology is based on 8 years of robotics research and is the first software to enable free and realistic hand interaction in virtual reality. Their products are currently used for games, industry training and rehabilitation in VR. The technology is based on algorithms that can predict and visualize intended body movement, enabling, among much else, patients who suffers from disabilities from stroke to do more relevant and motivating rehabilitation exercises in their homes. Similarly, Gleechi's technology makes it possible for robots to pick up objects without being restricted to pre-programmed repetitive movement. This way robots can perform tasks that previously demanded the dexterity and flexibility of human hands. Gleechi's customers include world-leading companies within automation, manufacturing and VR development, and they are now aiming to become the standard solution for all hand interaction.

Top fact

Stroke rehabilitation and industry training can be done from your home.

20

Company
HAPPITECH
Location
Netherlands

Atrial Fibrillation is the most common Arrhythmia and a prevalent cause of stroke in the world, leading to annual totals of 750,000 hospitalizations and 130,000 deaths, with those numbers rising for the past two decades. Happitech allows you to detect a heart rhythm disorders simply by using your smartphone camera. By placing your finger on the camera, the Happitech algorithms can detect even the smallest variations in your heartbeat.

22

Company
HYPELABS
Location
Portugal

HypeLabs is an SDK platform that allows any device to communicate even without the internet. Today, Hypelabs is used by more than 300 companies on a closed beta program. Their client portfolio has more than a dozen Fortune 500 enterprises using their services. From messaging apps to vehicles, file sharing tools to drones, their technology is already being used on a wide variety of use cases. The founders' vision is to connect everything in the future: securely, interoperable and even when offline.

21

Company
HEALTHAPP
Location
Spain

Treatment of an eating disorder ranges from 500€ to 2.000€ per day. Outpatient treatment, including therapy and medical monitoring, can cost up to 100,000€, and significant decreases the quality of life. Jordina is the founder of HealthApp a young start-up focused on the development of intelligent mobile tools for the health sector, with special emphasis on improving communication between patients and therapists in long-term and chronic illnesses. The startup wants to offer effective home support between medical consultations. Healthapp's aim is to become the first European company facing the challenges of connecting patients and therapists, improving their quality of life and improve the European healthcare starting with the treatment of Eating Disorders. Everyday Healthapp impacts the lives of 600 patients who use the application daily. Jordina appeared as one of the most promising entrepreneurs in Spain for 2017, and has been recognized by MIT's under 35 innovators.

ISTOCK / HEALTHAPP

EU TOP 50 START UPS

23

Company
IN OVO
Location
Netherlands

They are killed either by suffocation or shredding, based on manual gender typing. In Ovo is developing a gender typing machine which can detect sex differences by day nine with 95 percent accuracy. The mass spec test takes a second per egg. The company has shown its capable of determining gender fast and cost-effective and is now scaling up its throughput. As the poultry industry in Germany, France, the US, Australia, Belgium and the Netherlands want to stop the killing of chicks soon, there is great interest in Ovo's technology. In Ovo is refining egg waste for valuable proteins and is developing a virtual assistant for hatchery managers to improve the welfare for the animals and maximize the earnings for farmers. In Ovo collaborates with large industry players, NGO's and the Dutch government and its closing a funding round that will enable it to grow improving the lives of billions of chickens and thousands of farmers around the world.

24

Company
INCLUDE
Location
Croatia

Include is a Croatian hardware company, founded by a 22-year-old innovator Ivan Mrvoš. In less than 3 years they became one of the top producers of smart street furniture in Europe. Their Steora smart bench is currently the most advanced street bench on the market. It provides cable and wireless charging for all smart devices, a free Wi-Fi hotspot, street light in the evening, 15 sensors for tracking bench usage and environmental data, and a dashboard—an advanced web platform where their users can track data from every bench in real time. More than 450 benches in 125 cities and municipalities across the globe have already created social spots providing huge amounts of data for future urban planning, which helps optimize public spaces, making them more efficient in every aspect for their citizens.

25

Company
INKONOVA
Location
Netherlands
Co-founders
Ahmed AlNomany (32)
Pau Mallol (37)

Deep in underground mines, some zones are inaccessible. Inkonova builds drones that fly, drive and climb and use laser technology to scan zones, and create a 3D map of them. Inkonova is advancing aerial robotics technology to push forth human reach to any space untouched by man-made infrastructure. Inkonova's TILT Ranger; was the world's first specialized drone solution for underground mines, they have sold units and flown missions in Sweden, UK, Canada, Peru, Chile and Mali. Their R&D effort is creating a new feature in aerial robotics; "Batonomous Navigation". Currently drones in the open air have eyes and brains which help them navigate, but they cannot navigate in dark caves and mines. Inkonova is transforming birds into bats, autonomy to batonomy, where an intricate architecture of laser scanning, flight control, mapping and localization algorithms are used for a new set of eyes and brains.

INKONOVA

26

Company
MAGNITUDE SPACE
Location
Netherlands

This number is growing fast, with 3 billion annually. What if you could start gathering Insights of Things directly from these connected devices, anywhere on earth, even in the most remote places? The location and condition of livestock, leasing equipment, beehives, grain silos, rivers. You name it. The Internet of Things (IoT) truly means everything. It could transform the way our planet lives, works and operates on a daily basis.That's where we come in. Magnitude Space offers a global network bringing Insights of Things to organizations worldwide.

27

Company
MEDIKURA
Location
Germany

Less than 0.5% of Adverse Drug Reactions (ADR) cases are officially reported. Reliable data on ADRs is desperately needed for treatment, drug safety, and drug discovery. MEDIKURA is a healthcare IT and analytics platform with the primary goal to improve drug safety. They offer a holistic process innovation by providing an automatic, standardized and central reporting platform which connects patients, doctors, and pharmaceutical companies in real-time. MEDIKURA provides pharmaceutical companies with digital interfaces to enable multi-directional data exchange between all stakeholders.

28

Company
MEMGRAPH
Location
Croatia
Co-founders
Dominik Tomicevic (26)
Marko Budiselic (26)

Memgraph is accelerating the world's ability to build the next generation of enterprise applications by bringing the world's first high-performance database management technology specifically optimized for storing and exploring deeply interconnected data in real-time. By blending cutting-edge algorithms and data structures, in-memory computing, and building everything from the ground up using proprietary techniques, Memgraph delivers performance improvements between 10x-100x compared to existing commercial solutions. Startups and enterprises are turning to Memgraph to power state of the art fraud detection, anti-money laundering and cyber security systems amongst other applications.

EU TOP 50 START UPS

29

Company
MR.CHADD
Location
The Netherlands

Mr.Chadd guarantees on demand homework assistance within a 10 second time frame. The platform has launched on the 26th of september 2017 and already assists over 100.000 students in the Netherlands who seek personalized education from screened and trained university educated coaches. The students pay a monthly subscription and can use the service to chat, send photo's and speech memo's, enabling them to get the direct, tailor-made help while doing their homework. Over 100 coaches work for Mr.Chadd on a freelance basis from any location in the world and get paid by the second helping thousands of students through personalised homework assistance.

30

Company
NOVAGRAY
Location
France

More than 50% of cancer patients undergo radiotherapy as part of their treatment and 5–10% of them will develop severe side effects. There is currently no tool to identify at-risk patients before starting the treatment. NovaGray is developing the first tests assessing patient's sensitivity towards radiotherapy (for breast, prostate and lung). The NovaGray tests only require a blood sample, taken before radiotherapy starts, and provide quick results within a week. This breakthrough innovation is patented and relies on both a biological assay and a predictive analysis. NovaGray's first test for breast cancer was validated on over 500 patients in a trial funded by the French National Cancer Institute (INCa) and was CE-marked in March 2016.

31

Company
OURPATH
Location
United Kingdom

OurPath is a digital lifestyle change programme aiming to tackle the growing 'lifestyle' disease epidemic. Less than a year after its initial June 2016 launch, OurPath became the first ever digital behavioural change programme to be commissioned by the UK's National Health Service (NHS) where lifestyle diseases such as type 2 diabetes cost the system £9 billion per year. On the back of two clinical trials, and an NHS pilot, users of the OurPath programme have seen an average of 8.2% weight loss and over a 50% reduction in risk for type 2 diabetes. The benefits of OurPath are not limited to health alone. It is estimated that just a 5–7% reduction in weight will save the NHS roughly £70 million a year, with wider economic savings to the United Kingdom of nearly £210 million a year. OurPath is looking to roll out its programme across the United Kingdom and throughout Europe, bringing an effective and accessible preventative solution to those who need it most.

32

Company
PHOTONEO
Location
Slovakia

Photoneo developed a unique, patented method of 3D object sensing, which allows them to produce 3D cameras with the highest resolution at frame rates up to 60 FPS. Such high performance of resolution and speed in a single camera allow Photoneo to deliver its revolutionary 3D technology to any company that produces or assembles products using automated production lines or robots. While designing and bringing this new smart 3D camera to market, Photoneo has also developed a state of the art 3D scanner for static scenes, which it is actively selling globally to clients as part of their advanced automation. Photoneo sells complete turn-key bin picking solutions, allowing robots to grab randomly placed objects from a container sequentially and orienting them to a desired place and position. After filing their first patent, Photoneo attracted one of the most significant Central Eastern European seed funding rounds of 2.1M EUR, led by Prague based Credo Ventures.

TOP FACT

Radiotherapy complications represent an economic burden estimated at over €400M / year just for the European healthcare systems.

EU TOP 50
START UPS

ISTOCK

EU TOP 50
START UPS

33

Company
PLANRADAR
Location
Austria

PlanRadar is a cloudbased SaaS solution for construction documentation, task and defect management in construction and real estate projects. Today there are on average 1–2 defects per 10m² in real estate projects. PlanRadar supports the users in recording, documentation, communication and tracking of tasks and defects. Project managers, architects, technicians and facility & property managers can record tasks and defects in a cost & time saving way directly on the site with their tablet or smartphone and assign them in real-time to the responsible project stakeholder. Today PlanRadar has more than 1,200 customers from 23 countries worldwide, and receives more than 200 new registrations a week from companies who would like to work with PlanRadar.

34

Company
ProperGate.co
Location
Poland
Co-founder
Rafał Grudzie
(20)

ProperGate was designed to address the challenge of logistics coordinators at construction sites through the automation of delivery requests, the synchronisation of equipment & unloading spots, traffic monitoring as well as intelligent, hands-free communication with drivers, operators, contractors, traffic marshalls & security guards to ensure just-in-time deliveries. Their solution allows to eliminate traffic jams and decreases CO2 emission. ProperGate has been successfully implemented at the construction site of the highest skyscrapper in Europe and will soon be implemented at several new construction sites by one of the world leading project development and construction groups. ProperGate is reinventing the way one deals with logistics in the construction & real estate industry.

35

Company
REMMEDVR
Location
Poland

Currently the only two solutions for treatment which are available on the market are either an eyepatch, or an expensive, inefficient vision therapy that requires parents to bring their children to optometry clinics 2–3 times a week. RemmedVR addresses this by providing a telemedicine solution for a home vision therapy with the use of VR. For the first time doctors have full ability to monitor the therapy process and have access to objective results completely remotely. This breakthrough in vision therapy enables patients to get cured at least twice as fast by having access to home therapy on a daily basis, substituting the medieval eye patch and reducing the costs of treatment by 50% on average in comparison to stationary vision therapy.

Therapy with the use of VR

ISTOCK / REMMEDVR

36

Company
SENSIFAI
Location
Belgium

The volume of video archives is skyrocketing and multimedia content owners such as broadcasters and surveillance system companies require an intelligent software that automatically understands video contents and tags them to make their archives searchable, monetize archives in an online platform, and automate monitoring. Manual tagging is too expensive and time-consuming and requires many hours of human labor. Sensifai, a Techstars graduate addresses this challenge by offering the world's most comprehensive automatic video tagging software which recognizes more than 10,000 different scenes, objects, actions, celebrities, sports, landmarks, logos and NSFW content. Their software uses state-of-the-art deep learning technology and is trained over several millions of videos, images and audio signals. Sensifai's technology can fundamentally change the way computers interact with humans and significantly improve security systems, multimedia asset management, and assistive technologies. The security applications of Sensifai include live monitoring such as for example flagging of weapons, fire, crying and unattended bags. In robotics and assistive technologies, Sensifai facilitates developing robots understanding surrounding environment and similarly helps visually impaired people by live descriptive tagging over wearable cameras.

37

Company
SKRIWARE
Location
Poland

Skriware's mission is to teach children 21st century STEAM education skills using 3D printing technology, in particular in the process of designing, printing/prototyping, building and programming a personalised robot. They have developed an entire Skriware ecosystem, being a one-stop-shop consisting of easy-to-use, nicely designed and versatile 3D printers, 3D-printed robots/drones and an online education platform with software solutions such as the 3D creator, their mobile app teaching programming, and a 3D model library. Skriware's 3D printers, courses and lessons are used in 10 countries, taking children on their personalized learning adventure through space, while teaching them the most sought-after skills on the job market.

EU TOP 50 START UPS

38

Company
SOLHO
Location
Netherlands

Agriculture must double food production to sustain the global population, with fewer resources and reduced environmental impact. Over 90% of population growth is concentrated in the so-called sun-belt region. These areas are characterized by an abundant solar resource and by poor or unreliable infrastructures. This is a major problem as it hampers the deployment of new horticultural projects, despite the huge demand. SOLHO has developed an innovative system that uses the sun and sea water as an input to generate all the streams required to operate a greenhouse facility. The system has 3 key features: it is completely off-grid, it operates 24/7, and it allows to dramatically decrease the operational costs by 90%. Solho designs and develops the solar system and sells it to greenhouse manufacturers for an average price of 5M for a 5 ha greenhouse project. SOLHO is finalizing the design of the proof of concept to be operational by August 2018 in France and plans to sell the first commercial system by 2019.

39

Company
STORRO
Location
Netherlands

Storro B.V. is a high-tech software company that contributes to a safer world through enabling secure communication, making secure sharing easy. Storro is a peer-to-peer Blockchain application enabling you to safely store and share files without the cloud decrease dependency on cloud providers, which is good for privacy of Europeans.Thanks to Storro's unique mix of technologies, your files are encrypted and distributed to storage locations you trust. With Storro your files only come into the hands of those for whom they are intended. The founders of Storro are cyber security experts with specialization in, among others, encryption, network protocols, blockchain technology and geopolitics having received recognition through various (inter)national awards.

40

Company
SUNLIGHT.IS
Location
United Kingdom

Sunlight enables employers to create an engaging learning culture at work by empowering their staff to take ownership of their professional development. Through the platform employers can control how much each team member is allowed to spend across the year, approve requests from their employees on everything from books, courses and events, and only get charged for what they use, in one monthly invoice. Through its work with existing clients such as Skimlinks, Wonderbly and Typeform, Sunlight has seen thwat it improves learning engagement by over 40%.

Did you know that in 30 years from now, there will be 9 billion people living on this planet?

41

Company
SYMPTOMA
Location
Austria

Misdiagnosis have been a blindspot in medicine for decades. Each year, 1.5 million lives could be saved with the right diagnosis. Symptoma.com is an award winning search engine for diseases. Physicians enter symptoms and receive a list of matching causes—sorted by probability for the respective patient. Symptoma thus empowers doctors and patients to diagnose even ultra rare diseases. The company has invested over 10 years in R&D, and so far established one of the largest disease databases with over 20.000 diseases and millions of connections to symptoms, risk factors and statistics. With over 700,000 unique users per month—the German Minister of Health has acclaimed SYMPTOMA as one of the world's best health care innovations.

42

Company
TALENTADORE
Location
Finland

TalentAdore Ltd. is a Finnish HR technology company founded in 2014. Their Virtual Recruitment Assistant (VRA) is a recruitment software that cleverly combines Artificial Intelligence (A.I.) and Natural Language Processing (NLP) to handle the entire recruitment process from job postings, to hiring decisions, and building dynamic Talent Communities. With its consumer grade user experience, the VRA streamlines recruitment end-to-end processes by automating manual and repetitious tasks. The technology has been proven to have high demand. During the last 6 months, they have sold their product to some of the biggest companies in Finland and entered into Mexico.

43

Company
TALKIN'THINGS
Location
Poland

Talkin' Things is the leader in delivering smart packaging solutions for IoT and has a long history of working with leading brands and packaging companies to deliver innovative solutions that define the trends in the Smart Packaging market. Talkin' Things is the only provider in the world that offers a real end-2-end solution with customizable technology, software, hardware and marketing creation. Products using their technology include customer engagement tools, security and logistic options, and a comprehensive data management system with customizable APIs. Talkin' Things has over 20 pending patents and is bringing 1.5 Billion tags on the market within a year, reimagining the customer experience.

EU TOP 50 START UPS

44

Company
TEAM8
Location
France

Team8 is a connectable watch for children (5–12 years old) encouraging them to be a superhero and to challenge their friends through various games requiring the kids to do exercise, to become stronger heroes! Parents get access to important data on children's weight, physical activity, but also their food intake. Kids will receive warnings, in case products could pose allergies, and reminders, for medication adherence. Team8 will help parents to manage their children's health issues. Team8 has built many partnerships with big corporates for technology (communication), health (hospitals) and distribution (toy stores, insurance) and they are on a mission to fight obesity through a fun and engaging way.

45

Company
TOPOSENS
Location
Germany

Toposens invented the world's first real time 3D Ultrasound Sensor bringing sound vision to technology and are working with customers ranging from BMW to Porsche. With its systems cars gain the ability to park and drive autonomously in close proximity and low speed environments. Their 3D sensors are working with ultrasound, enabling them to see like bats, which navigate through sound and therefore enabling precise 3D detection of objects in real time through powerful algorithms and standard hardware. The sensor system of Toposens generates new ways of providing non-optical vision to machines, simplifying and transforming our interaction with technology making autonomous systems of tomorrow smarter and more efficient. Next to automotive applications they see huge opportunities in robotics, building intelligence and logistics and the consumer electronics sector. Next year Toposens will release its first anonymous people tracking solution and a low-cost robotics collision avoidance sensor to bring the vision of intelligent technology one step closer to become reality. Toposens was awarded ICT Company of the year by the German Ministry of Economic Affairs and Energy.

46

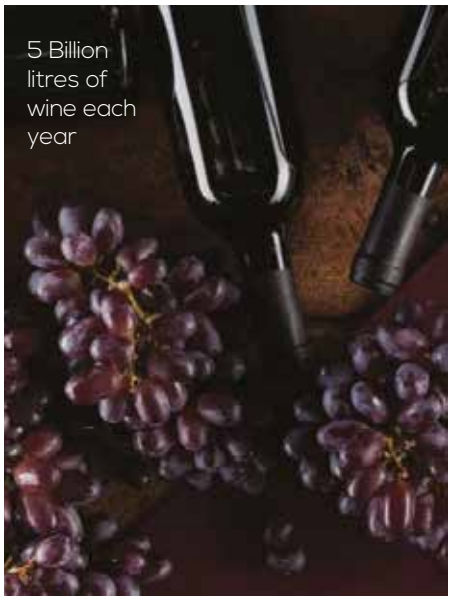
Company
TYPINGDNA
Location
Romania

Authenticating people online should be seamless and secure. TypingDNA recognizes people by the way they type and uses this for online authentication. Their proprietary A.I. based typing biometrics authentication solution allows companies to have an accurate typing pattern matching solution with an easy-to-integrate API making the integration quick and easy. TypingDNA is currently used for online banking authentication, online payments fraud prevention, but also to stop students from cheating on their online degree exams. European financial service companies are currently facing new regulation which requires additional customer authentication for preventing fraudulent transactions. TypingDNA is a solid no-compromise solution, which is safe and user-friendly.

47

Company
ULTIMATE.AI
Location
Finland

Ultimate.ai changes the way humans work in customer service. They use state-of-the-art deep learning models that learn from historical chat data and can handle common customer service cases automatically while escalating hard cases to humans. Ultimate.ai supports multiple languages and can be trained with chat-logs in a matter of days. Their AI works alongside humans learning from them and freeing them to focus on things that matter. Ultimate.ai is working with multiple large companies including Telcos, Government and Airlines.



ISTOCK / VEGEA

48

Company
UNITDOSEONE
Location
Poland

Hospital drug distribution, is insecure, error-prone and puts patients and communities at risk. UnitDoseOne automates pharmacies , providing the highest level of robotics automation to hospitals which are still using manual drug distribution. During the past two years they have built an advanced robotic pharmacy that makes drug distribution in hospitals more efficient and secure, saving hospitals millions each year, while improving the quality of care to patients. They have secured a European grant to fund the initial prototype in 2015 and are getting ready for the first hospital implementation in Europe. They have signed their first US-based hospital for launch in Q1 2018 and have secured a pipeline of 20+ hospitals in Turkey.

49

Company
VEGEA
Location
Italy

Each year we create about 6,5 million tons of waste as a result of wine production, which is the solid waste that remains after crushing the juice from the grapes. Italy alone produces 5 Billion litres of wine each year. The disposal of the enormous quantities of grape marc each year presents a considerable challenge for winemakers because of its low digestibility, which does not make it a good feed for livestock and its acidic pH, which does not make it a good fertilizer. Vegea transforms wine waste into a high value added material, thus offering a green and cruelty free alternative to the materials that are already placed on the market. This has gathered big interest from the major fashion and automotive global brands, aiming to introduce Vegea into their production in order to face the growing need for eco-sustainable products.

50

Company
WATERDATA
Location
Switzerland

Dynamic pricing is a core capability for market leaders in several industries, which is why Waterdata's product liquidprice was born—to enable Dynamic Pricing as a Service. They use machine learning solutions to better understand demand behaviour and establish catalogue pricing accordingly. Waterdata's mission is to support the digitalization, e-commerce and data-centric approaches in many EU digital markets.

TOP 50

MOMENTUM FOR CHANGE

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