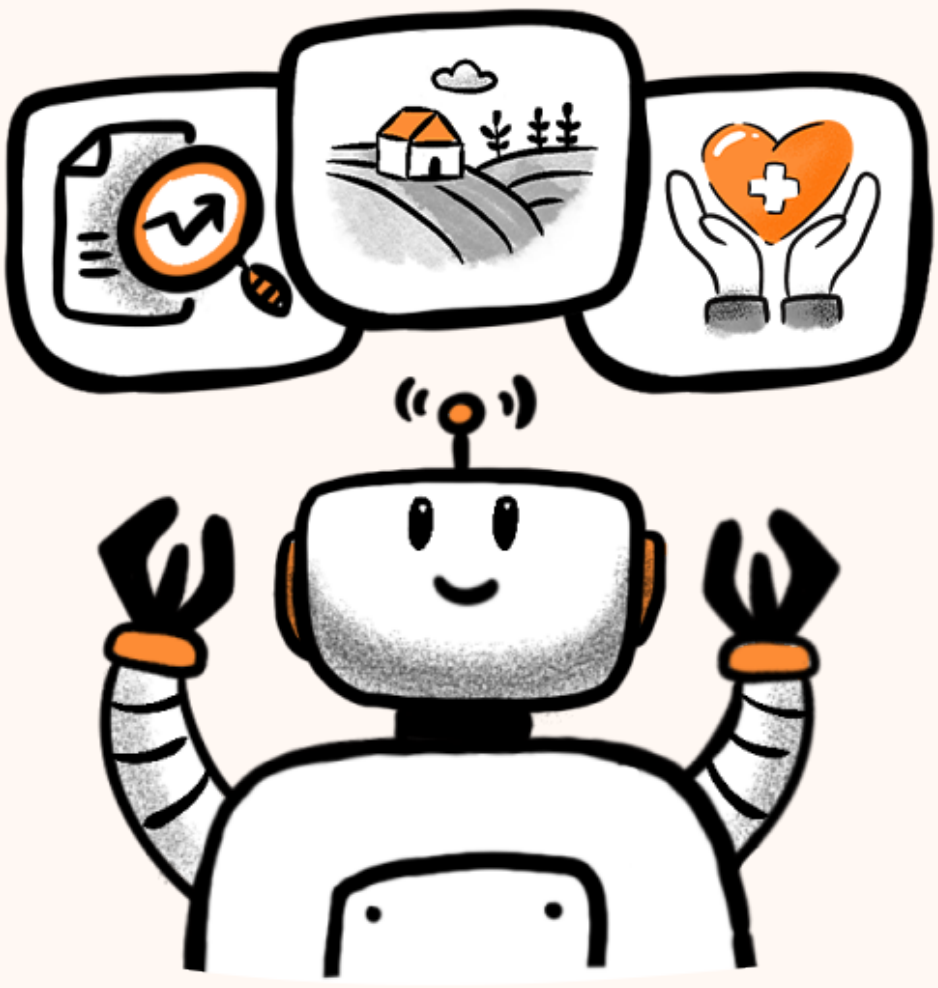
IoTIntelligence™ REPORTS

Powered by: Valuer



IoT Community

Computer Vision

Areas of Innovation Included:

Image Recognition

Medical Imaging

Video Analytics

Precision Agriculture

Smart Data Capture

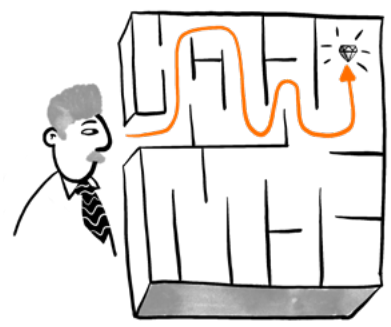


Table of Contents:

Image Recognition

Image recognition is a sub-category of computer vision that analyzes and identifies patterns in images in order to detect, classify, and tag specific elements through image pixels pattern interpretation. Image recognition is enabled through a combination of several technologies, most commonly supervised learning, neural networks, and deep learning algorithms.

There are numerous potential applications of image recognition, some of them being facial recognition, digital image search, image categorization, optical character recognition (OCR), defect detection, media, and security surveillance, among others.

Data from Valuer:

Average Year of Inception of Image Recognition companies:

2015

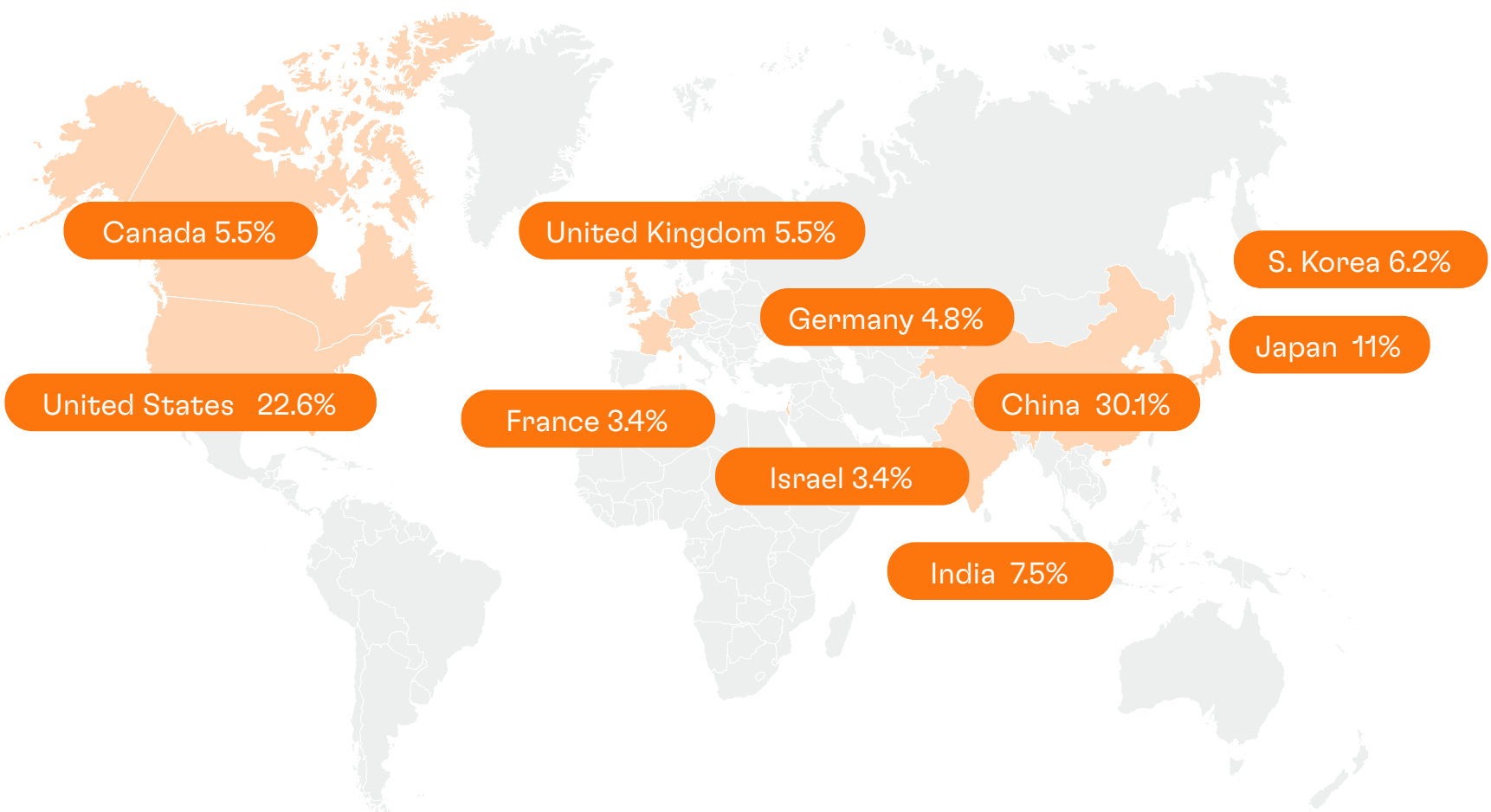
Average Funding of Image Recognition companies:

$6,811,605

Maximum Funding of Image Recognition companies:

$171,074,965

10 countries with the largest number of Image Recognition companies on Valuer:



Company Highlight:

Clarifai

Year of inception:
2013

Country:
United States

Company stage:
Growth/Expansion

Funding:
100,000,000 USD

Team size:
51 to 100

Website:
clarifai.com

Clarifai has developed a platform for building AI-powered software solutions via API, mobile SDK, and on-premise deployment models. Applying deep neural networks and machine learning to understand unstructured image, video, text, and audio data, the company enables customers to solve complex challenges through object classification, detection, tracking, geolocation, visual search, and natural language processing (NLP).

The Clarifai platform delivers an automated, scalable, and end-to-end AI lifecycle, including dataset preparation, model training, and deployment. Clarifai was founded in 2013 and employs nearly 100 people in two US-based locations, the Wilmington (DE) HQs and the San Francisco (CA) premises, and Tallinn, Estonia.

Customers:

This company has not disclosed information for its client list.

Business Model

The company's business model is centered around the following characteristics:

- Clarifai operates mainly on a B2B model, offering its enterprise AI solutions to businesses across different industries, including retail, manufacturing, media, and transportation, among others. The company offers solutions to the public sector alike.
- The company offers a free Community plan, which comes with 1,000 free operations to get clients started, with the option to later switch to one of the paid plans, namely Essential, Professional, and Enterprise, each differing in the features available and the price accordingly.
- Moreover, Clarifai provides data labeling services, offering discounts per large volume.
- Clarifai solutions are suitable for both technical and non-technical users, making it a potential choice for customers seeking to democratize computer vision use.

Value Proposition

The company communicates the following as its main value propositions:

- Clarifai's nontechnical, low-to-no-code user interface offers an intuitive and flexible workspace for building complex and composite model scenarios.
- The company's platform includes a Forensic data search with image and video asset searching and metadata tagging capabilities in applications that require access to extensive video footage libraries.
- Over the years, Clarifai has partnered with companies with the likes of TAGX, AWS, Azure, Google Cloud, Nvidia, Snowflake, UiPath, Carahsoft, Bae Systems, Palantir, and others. Clarifai also records successful collaborations with US government departments and defense agencies on computer vision use cases.
- Clarifai's platform architecture and experience enable customers to obtain necessary regulatory certifications.

Product Portfolio 1/2

Clarifai's platform Portal features an intuitive, drag-and-drop user interface powered by machine learning and pre-trained AI models for searching, sorting, and organizing unstructured data. It caters to clients in the aviation, manufacturing, retail, tourism, insurance, media and entertainment industries, as well as the military forces, civilian intelligence and state agencies, among others. The models can be used out-of-the-box or be adjusted to detect specific content, faces, embedded objects, and text in images and video or to predict attributes like celebrities, food items, colors, and textures.

Clarifai's computer vision technology is centered around convolutional neural networks, enabling computers to learn from visual data examples and form decisions and conclusions independently, thus allowing applications to predict and give correct tags to images and videos. Leveraging pre-trained models, Clarifai enables clients to detect and identify logos, apparel, people, vehicles, weapons, uniforms, and hate symbols in pictures and videos. In terms of its video content, Clarifai enables analysis across sensor types such as RGB, EO/IR, Synthetic Aperture Radar, and WAMI. Moreover, Clarifai's optical character recognition (OCR) solution provides meaningful insight and turns handwritten, typed, or printed textual information into machine-encoded text.

The company's end-to-end AI portfolio integrates the following products:

- Scribe Label - a platform for data labeling using AI automation to accelerate the productivity of high-quality training datasets with features like video labeling, polygon interpolation, and task review. The company also offers a custom Scribe LabelForce service for outsourcing data labeling tasks to a team of AI data annotators and researchers.
- Spacetime Search - an AI-based visual search engine that looks for similarities and custom concepts in images, video, and text data, automatically indexing the unstructured data for deep search and management. The engine contains an intuitive user interface for bulk operations, sorting, and data filtering.
- Enlight Train - a custom model training suite packed with pre-trained AI models. The portal's UI or APIs are used to train and produce highly accurate models with various training types, such as transfer learning and deep training. Furthermore, Clarifai offers an Enlight ModelForce that utilizes AI experts to build customer-specified models.
- Armada Predict - a tool that simultaneously handles multiple model instances in analyzing unstructured image, video, and text data by using various prediction types for detecting people, places, and objects.
- Mesh Workflows - an architecture that connects different AI models to perform complex actions on data and build solutions for specific business

Product Portfolio 2/2

needs. The mesh architecture can manage multi-modal AI workflows, automated data annotation, and face detection and object character recognition workflows.

- Flare - an edge AI platform that offers advanced predictive capabilities and accelerates intelligent video applications from streaming, decoding, batching, and interface to on-screen display metadata output. It features secure deployment and highly accurate object detection and tracking.

Clarifai's platform has cross-industry and industry-specific applications. Clients requiring organization and recommendation services could utilize the company's offerings for metadata generation, visual search, document and media analysis, and product recommenders. The platform is also applicable for content moderation, audio transcription, text translation, predictive maintenance, quality control, video security, and face recognition.

Sustainability

The company's offering does not have a clear focus on sustainability.

Market Opportunities

The company is operating in the computer vision market.

- According to Grand View Research, the global computer vision market, valued at $11.22 billion in 2021, is expected to grow at a CAGR of 7% from 2022 to 2030 and reach $20.88 billion.
- The increasing use of AI in computer vision solutions in consumer drones and autonomous and semi-autonomous vehicles, coupled with the advances in image sensors, advanced cameras, and deep learning techniques, have been identified as the key drivers for the market's growth.
- The industrial segment contributed with the largest revenue share of over 51% in 2021, mainly due to the rapid adoption of computer vision systems in the automotive and transportation industry.
- Regionally, the Asia Pacific region accounted for the largest revenue share of over 40% of the global computer vision market in 2021 due to the presence of major players like Sony Semiconductor Solutions and increasing investments in Chinese companies.
- Leading players in the computer vision market include Cognex Corporation, Intel Corporation, Keyence Corporation, Matterport, National Instruments, OMRON Corporation, Sony Semiconductor Solutions Corporation, Teledyne Techonologies Inc, Teledyne Geospatial, and Texas Instruments Incorporated, among others.

Achievements

To date, the company has achieved the following milestones:

- In November 2022, IDC MarketScape named Clarifai a leader in computer vision platforms.
- G2 reviewers have, on several occasions, rated Clarifai as one of the easiest-to-use image recognition software.
- Clarifai won the AI Breakthrough Award for Computer Vision Innovation in 2022.
- The same year, Clarifai was awarded the Best Innovation in Computer Vision and Best AI Product in Government at the CogX Awards.
- In 2021, Safetytech Accelerator selected Clarifai to pilot its visual image recognition and text analytics to improve safety in the construction sector.
- The company was also a recipient of Stevie® Award for Artificial Intelligence and Machine Learning in 2021 for the second year in a row.
- The same year, Clarifai also made it to the Inc's 5000 for a second consecutive year.
- In 2019, Clarifai was named a leader in Forrester's New Wave Computer Vision Platforms report.
- Moreover, CompassIntel awarded Clarifai the best Artificial Intelligence Enterprise Solution award.
- Deloitte featured Clarifai in the 2019 Technology Fast 500 Ranking list in 71st place, with a growth rate of 1,842% from 2015 to 2018.
- The company was also recognized as one of the world's more innovative startups as a winner at NVIDIA's GPU Technology Conference.
- Clarifai won the top five places in image classification at the ImageNet 2013 competition.

Executive Team

Matthew Zeiler, PhD
Founder & CEO

Experience:

- Software Engineering Intern at Google
- President and Founder of Review-Mate

Academic Background:

- PhD in Machine Learning and Image Recognition from New York University
- BAS in Engineering Science from the University of Toronto

Alfredo Ramos
Sr. Vice President of Platform

Experience:

- Progressed to General Manager of Vistaprint's Digital Business
- Director of Engineering at Network Solutions
- Director of Product Development at InQuent Technologies

Academic Background:

- MBA in Finance and Enterprenual Management from The Wharton School
- MLA in Information Systems from Harvard University
- BSc in Computer Science from the University of Toronto

Medical Imaging

Medical imaging refers to the use of different technologies to support detection and treatment of diseases and medical conditions of the human body. Most common technologies related to the field of medical imaging include x-rays, ultrasound imaging, mammography, computed tomography (CT) scans, MRI, and nuclear medicine, among others.

The technology's potential is further supported with the ongoing progress in computer vision, which helps specialists make more accurate and timely diagnosis. Potential applications of medical imaging include confirming, assessing, treating, and following the progress of diseases and certain medical conditions.

Data from Valuer:

Average Year of Inception of Medical Imaging companies:

2013

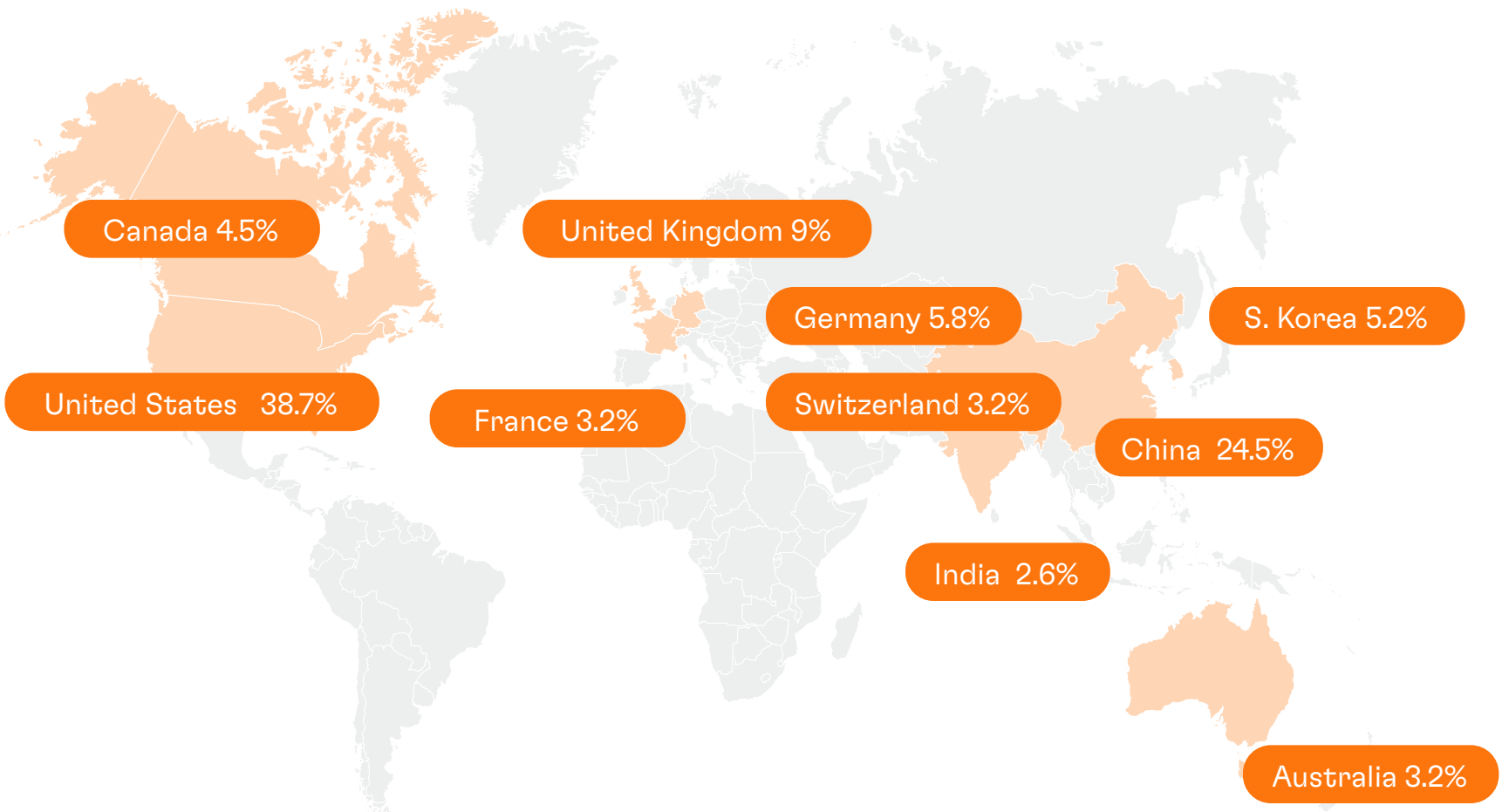
Average Funding of Medical Imaging companies:

$8,248,213

Maximum Funding of Medical Imaging companies:

$135,000,000

10 countries with the largest number of Medical Imaging companies on Valuer:



Company Highlight:

CureMetrix

Year of inception:
2014

Country:
United States

Company stage:
Growth/Expansion

Funding:
N/A

Team size:
11 to 50

Website:
curemetrix.com

CureMetrix utilizes advanced AI-based technologies and research to deliver better cancer detection and treatment. Its medical image analysis products leverage artificial intelligence and deep learning to assist radiologists in making data-driven decisions in breast cancer screening, treatment, and diagnosis.

By working with partners such as John Hopkins University and MD Anderson Cancer Center, CureMetrix has obtained over five million mammogram images to train its algorithm to recognize different anomalies. The San Diego-based company has an interdisciplinary team of 43 employees, including computational physicists, data scientists, and software developers.

Customers:

Nuance
(partner)

Nanox
(partner)

Philips

Shin Imaging
Center

Business Model

The company's business model is centered around the following characteristics:

- CureMetrix equips hospitals, imaging centers, and other healthcare institutions with AI-based breast cancer detection and treatment solutions that evaluate mammograms, leading to improved clinical results, lower healthcare costs, and better-served patients.
- The development of CureMetrix's products has been supported by multiple partnerships, with the company collaborating with several solution partners, integration partners, and academic and research institutions and organizations.
- The company's products are in different commercialization stages; its triage solution is FDA-cleared for commercial use in the US and ANVISA-cleared for use in Brasil. Additionally, its CAD software, offered on a SaaS model, is cleared for use in Brasil, while its two remaining products are still in development and unavailable for commercial use.
- In 2020, CureMetrix partnered with Nuance, integrating its solutions with Nuance's AI Marketplace, Nuance PowerScribe, and PowerShare Network, which connect over 7,000 US healthcare facilities.

Value Proposition

The company communicates the following as its main value propositions:

- CureMetrix's solutions, which target radiologists, are designed to improve the quality of cancer diagnosis and treatment by screening post-biopsy follow-up.
- Its investigational CureMetrix CAD software, cmAssist®, has been shown to reduce recall rates, i.e., reduce false positive rates, increase early detection, and improve the analysis and evaluation of dense breast tissue. Moreover, the solution has been demonstrated to contribute to a 30% reduction in the reading time of 2D mammograms.
- Furthermore, cmTriage®—an FDA-cleared, DICOM, and HIPPA-compliant software—allows radiologists to prioritize cases in their worklists based on the suspicious regions found by the algorithm.
- Additionally, the cloud-based triage solution is helpful in optimizing clinal protocol and maximizing the utilization of resources, as it is designed to be compatible with most screening mammography equipment.
- In the larger picture, CureMetrix's algorithm can help physicians track the rate of change and growth of suspicious areas over time, allowing for more informed follow-up treatments.

Product Portfolio 1/2

CureMetrix's product portfolio covers six AI-powered screening and diagnostic mammogram evaluation solutions to improve detection rates and give doctors and patients more confidence in mammography results. The solutions include:

cmTriage®

cmTriage® is a workflow management and organization tool that sorts a radiologist's mammogram workflow, prioritizing cases that show suspicious areas or lesions found by the algorithm. It received FDA clearance as a notification-only, parallel workflow tool that flags suspicious cases based on at least one suspicious finding. The software solution is adapted to all breast densities and works with both mass and calcifications. Reportedly, cmTriage only flags 8.2% of cases compared to the average radiologists' 9.6% recall rate at a sensitivity of 84.4%. At an increased default sensitivity of 93%, cmTriage can potentially catch one to two more cancers per 1,000 screening cases.

cmAssist®

cmAssist® is an investigational computer-aided detection (CAD) software that leverages AI to assist radiologists in identifying, marking, and scoring regions of interest in mammograms. The underlying algorithm searches through digital 2D mammograms for abnormal areas of density, mass, or calcifications to precisely quantify and classify anomalies as suspicious or verifiably benign. cmAssist also generates a unique, data-driven neuScore™, a quantitative measure of suspiciousness of a marked region of interest ranging from 0 to 100. The cmAssist software can find cancers up to six years before the first detection, helping radiologists improve their detection on average by 27% without increasing recalls. Additionally, in a head-to-head comparison with traditional computer-aided detection software, CureMetrix's cmAssist was proven to produce 69% fewer false markings.

cmAngio®

cmAngio® targets the detection of heart disease, leveraging AI to help doctors assess a patient's age-adjusted risk of heart disease. When the solution analyzes mammograms, it produces a proprietary BradleyScore™ based on the existence and characteristics of breast arterial calcifications that can be utilized to assess the patient's risk of heart disease and track patients' health over time. cmAngio is still in the development stage and is unavailable for commercial use.

cmDensity™

cmDensity™ is a radiology tool that assists in classifying breast density. Leveraging AI, the tool improves radiologists' consistency and reduces intra- and inter-reader variability. It also helps radiologists identify the correct BIRADS 5th Edition density with demonstrated 4-class (A-D) accuracy. cmDensity is not available for commercial use as it is still in development.

Product Portfolio 2/2

cmAudit

cmAudit enables radiologists to view and understand their mammography performance by providing confidential and independent analysis of historical data. CureMetrix collaborates with healthcare teams to secure a target set of mammography data for the audit and collect patient images and information about the diagnosis before processing the images and comparing them to the algorithm's results. A statistical analysis of the performance aids in identifying areas for improvement, and the company consults with healthcare providers to review the findings and provide a comparison score to other practices.

Sustainability

By leveraging AI to develop solutions that assist radiologists in evaluating mammograms, CureMetrix can ease the burden on healthcare systems caused by the rise in breast cancer cases through a more accurate and earlier diagnosis.

The company's offering can potentially help in achieving these Sustainable Development Goals (SDGs):

- SDG 3 (Ensure healthy lives and promote well-being for all ages): CureMetrix's products align with the UN's targe#t to achieve a one-third reduction in premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being. Correctly identifying mammogram anomalies at earlier stages and offering a more accurate treatment plan through AI-based solutions can lead to better patient recovery chances, decrease mortality rates, and tackle mental health challenges associated with cancer treatments.

Market Opportunities

The company is operating in the AI in medical imaging market.

- According to Grand View Research, the market was valued at $1.01 billion in 2023 and is projected to reach $8.18 billion by 2030, registering a CAGR of 34.8% during the forecast period.
- The market growth will be primarily driven by the rising demand for the influx of large and complex datasets, government initiatives to promote AI-based technologies, and increasing attention to lessen the radiologists' workload.
- Segment-wise, deep learning held the largest share of 58.6% in 2022, owing to its use in radiological applications. The NLP segment is identified to register the fastest CAGR during the forecast period.
- Based on applications, the breast cancer screening segment is anticipated to grow at the fastest rate from 2022 to 2030, boosted by the rise in breast cancer cases and patient desire for early-stage diagnosis.
- Notable market players include Siemens Healthineers, General Electric, Koninklijke Philips, IBM, Agfa-Geevaert Group, and Arterys, among others.

Achievements

To date, the company has achieved the following milestones:

- In 2022, CureMetrix received ISO13485:2016 certification for Quality Management Systems (QMS) for its AI-based mammography software.
- Following an agreement signed in 2020 with Nanox, a medical imaging company, CureMetrix's AI-based assistive diagnostic tool will be integrated into Nanox's cloud-based software platform - the Nanox.CLOUD.
- In 2020, CureMetrix was selected as a finalist in Fast Company's Innovation by Design Awards in the Health category.
- The previous year, in 2019, the company won the Best New Radiology Vendor of the Year from Aunt Minnie radiology experts.
- In 2016, the company signed a pilot contract with Philips after being selected as the most innovative MedTech solution by Philips, HighTechXL, and Get in the Ring.
- CureMetrix won first place at the Most Innovative New Product Awards 2015 in the Life Science Diagnostics & Research Tools category.

Executive Team 1/2

Navid Alipour
Co-Founder & CEO

Experience:

- Founder & CEO at AI Med Global (current)
- Co-Founder & Managing Partner at Analytics Ventures (current)
- Co-Founder, CEO & Board Member at CureMatch, Inc. (current)
- Co-Founder & Chairman of the Board at Dynam.AI (current)
- Co-Founder & Board Member at AV Lab (current)
- Principal at La Costa Investment Group (current)
- Senior Vice President, Investments at Wedbush Morgan Securities

Academic Background:

- JD/MBA in Finance from the University of San Diego
- BA in Political Science, Economics, and Middle Eastern History from the University of San Diego

Kevin Harris
Co-Founder & President

Experience:

- Principal at Harris Consulting Grup
- President & CTO at REEL Qualified
- CEO of SharePoint360
- Executive Director of the Regional Vision Initiative at The San Diego Foundation
- Chief Information Officer at Insurance Company of the West
- President at Silicon Space
- Internet Product Manager, Director of Development at DataQuick Information Systems

Academic Background:

- BS in Cognitive Science at UC San Diego

Executive Team 2/2

Alyssa Watanbe, MD
Chief Medical Officer

Experience:

- Director of Clinical Research at CureMetrix
- Executive Committee Member at California Radiological Society
- Associate Clinical Professor of Radiology at the University of Southern California
- Radiologist at Voxel Imaging
- President of the Japanese American Medical Association
- MD, Board of Directors, Compliance Director at Memrad Medical Group
- President of the American Society of Spine Radiology

Academic Background:

- MD from the University of California, San Francisco - School of Medicine
- BS in Biology/Biological Sciences from Stanford University

Sam Dribin
CTO

Experience:

- Senior Software Developer; VP Software Developer at CureMetrix
- Software Architect at Intervolve Incorporated
- Software Engineer at Pharsight Corporation

Academic Background:

- Master's degree in Neurobiology from Duke University School of Medicine
- BA in Biology from Northwestern University

Video Analytics

Video analytics refers to the processing of video data and transforming it into intelligence and business data. The end result is metadata, i.e., an automatically generated description of the video content. This metadata can be used for detecting, tracking, and categorizing objects into persons, vehicles, and others.

Video analytics has numerous applications in the real world, most notably to automatically detect spacial and temporal events important for monitoring traffic, sending security alerts, analyzing customers' flow in stores, and smart parking, to name a few.

Data from Valuer:

Average Year of Inception of Video Analytics companies:

2014

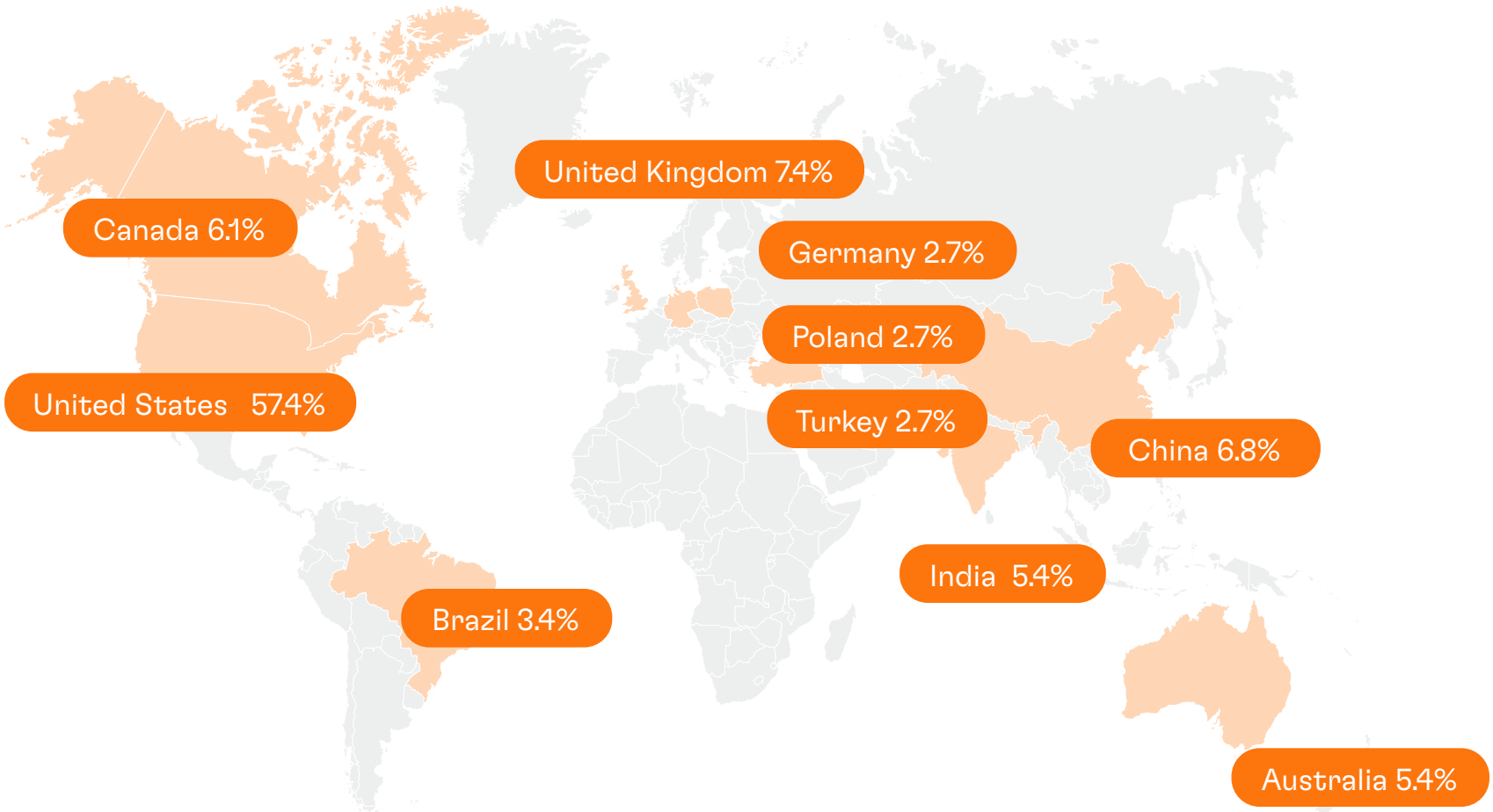
Average Funding of Video Analytics companies:

$6,571,327

Maximum Funding of Video Analytics companies:

$110,500,000

10 countries with the largest number of Video Analytics companies on Valuer:



Company Highlight:

CVEDIA

Year of inception:
2016

Country:
United Kingdom

Company stage:
Growth/Expansion

Funding:
N/A

Team size:
11 to 50

Website:
cvedia.com

CVEDIA develops and deploys AI-based video analytics for both the commercial and defense sectors. Having been among the first companies to use synthetic data to train deep learning neural networks, CVEDIA enables customers to go to market much quicker as traditional data bottlenecks do not apply.

The company's product portfolio includes video analytics software that runs highly optimized for a variety of hardware, including embedded devices, edge devices, on-premise, and cloud deployments for smart cities, security, and retail applications. CVEDIA's HQs are based in London (UK), with two additional offices in Arlington (US) and Singapore.

Customers:

Siemens

Ford

Business Model

The company's business model is centered around the following characteristics:

- CVEDIA conducts business on a B2B and B2G basis, targeting enterprises, system integrators, OEMs, and ODMs creating end-to-end computer vision solutions comprised of software, hardware, and architecture integration support.
- Its video analytics solutions enable organizations to deploy AI solutions for object recognition, enhanced safety, optimized efficiency, and exploring new product opportunities.
- As part of its service, the company offers several deployment options for computer vision algorithms, including hardware, cloud, and docker.
- CVEDIA's offering extends to algorithm deployment solutions compatible with Ambarella, NVIDIA, HAILO, INTEL, and Qualcomm products. In addition, its solutions can be deployed via AWS, Google Cloud, and Azure.
- The company's revenue model is based on licensing fees. When inquiring about the CVEDIA-RT software, clients can choose between a personal, production, and government/defense license. The secondary stream is based on fees the company charges for various deployment and integration services.

Value Proposition

The company communicates the following as its main value propositions:

- Deep learning expertise encompasses a notable advantage of CVEDIA's offering. Its robust software grants fewer false positives, leading to a reduced customer bottom line and more reliable products.
- The company's AI-based video analytics delivers efficient performance regardless of camera placement, exotic camera lenses, and hostile environmental and/or operating conditions.
- In addition, CVEDIA creates computer vision solutions even if data is significantly limited. The AI company combines data science expertise with machine learning against a backdrop of 3D design, providing synthetic data for computer vision applications.
- Its technology voids personal data, allowing the company to service solutions that are fully CDPR- and CCPA-compliant.
- CVEDIA-RT has been designed to significantly simplify the designing and deployment of computer vision AI solutions, enabling users to focus on building their envisioned product without enduring interruptions by the software's complexity.
- Moreover, the company offers free licensing of its software if the user intends to harness it for personal use.

Product Portfolio 1/2

CVEDIA is an AI solutions provider with a portfolio encompassing computer vision algorithms, deep learning services, video analytics, and deployment solutions. Its computer vision algorithms are developed using synthetic data. Some of the most significant advantages of its offerings include creating safe AI vision products that are extremely affordable, quick to develop and deploy, and save customers both time and money.

Its complete product suite features a variety of AI-based video analytics, including vulnerable road user detection, traffic monitoring, re-id of people and vehicles, vehicle classification, counter UAS detection and classification, perimeter intrusion detection, intelligent traffic solution, weapon detection, etc.

CVEDIA-RT

The company's software offering comprises an AI-powered modular, cross-platform inference engine, providing both high and low-level interfaces. The engine enables users to stream their camera content or import data via video files, images, webcam, screen capture commands, RTSP, or GStreamer, allowing for edge, cloud, and server processing. In addition, it features functionalities for creating, sharing, and managing event data, complemented with tools for data export in various formats and protocols, including JSON, MQTT, CSV, JPG, PNG, MP4, RTSP, and RTMP.

The software features ready-to-use AI models with high adaptability for diverse applications, including surveillance of people, vehicles, wildlife, and forestry, as well as industrial and residential/safety detection. The models are customizable and are suitable for aerial surveillance, perimeter security, crowd estimation, and smart parking applications, to name a few.

Instances encompass a main feature of CVEDIA-RT. They represent a specific input source (camera stream, a video file, etc.), comprising settings for running video analytics and exporting events. The software displays a dashboard panel of all instances used for specific solutions. When an instance is initiated, the software begins processing the related scripts and produces output sink data that can be visualized.

The instance dashboard features four panels:

- Input - showcases the input source images and customizes regions and triggers for the instance.
- Output - exhibits available visualization modules for the solution and the images generated from the instance's process pipeline.
- Data - displays data and events resulting from the instance's process pipeline.
- Configuration - indicates the generic instance settings and the instance-loaded modules.

Product Portfolio 2/2

Video Analytics Solutions

The video analytics suite features a broad range of modules for recording and processing instances. The selection includes modules for people counting and loitering, intrusion detection, smart parking, group detection, vehicle lane/road usage estimation, package detection, vehicle counting, aerial perimeter security, retail analytics, and on-street/curbside parking.

Sustainability

With advanced video analytics as its main offering, CVEDIA helps clients uncover potential patterns and detect behavior anomalies in highly congested places, which requires advanced machine learning to extract insight from the existing data.

In doing so, the company's offering addresses the following Sustainable Development Goals (SDGs):

- SDG 11 (Make cities and human settlements inclusive, safe, resilient, and sustainable): by offering smart parking analytics, CVEDIA helps clients reduce traffic congestion and, ultimately, pollution. The analytics are poised to make clients aware of frequent parking congestion, stimulating them to reassess the parking capacity in busy areas.
- SDG 15 (Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss): A client has used CVEDIA's detection models to aid them in ensuring protection against wildlife trafficking across Asian and African forests.

Market Opportunities

The company is operating in the global video analytics market.

- According to Markets and Markets, the aforementioned market is forecasted to reach $20.3 billion by 2027, rising from an estimated $7.1 billion in 2022.
- Registering a CAGR of 23.4% between 2022 and 2027, the market is anticipated to endure growth mainly due to the challenges imposed by the limiting capabilities of manual video analysis and the decreasing costs of video surveillance equipment.
- The facial recognition segment is anticipated to showcase the highest growth during the forecast period due to the extensive adoption of the feature across brick-and-mortar stores. In terms of region, Asia Pacific is expected to be the dominant shareholder, attributing its growth to the rising awareness about the potential security threats to individuals and the manufacturing industry.
- Notable market players include Aviglion, Axis Communications, Cisco, Honeywell, IBM, AllGoVision, Genetec, and IntelliVision, among others.

The company is also operating in the global synthetic data generation market.

- As projected by Grand View Research, this market is poised to grow from $163.8 million in 2022 to $1.79 billion by 2030, registering a CAGR of 34.8% in the forecast period.
- The market is projected to remain lucrative on account of the increase in synthetic data generation resulting from the exponential AI penetration.

Achievements

To date, the company has achieved the following milestones:

- Over the years, CVEDIA has advanced its synthetic algorithms to outperform the traditional ones, allowing the company to successfully market its offering and sign high-profile organizations as its clients, including FLIR, Siemens, Ford, Vivint, Airbus, Cubic Gridsmart and more.
- In 2022, the company partnered with AI chipmaker Hailo to develop high-performing, scalable thermal edge AI solutions powered by CVEDIA's synthetic data technology and the Hailo-8™ AI processor.
- Additional notable 2022 milestone for the company encompasses the invitation to INTEL's Partner Alliance. Prior to that, in 2021, CVEDIA was invited to be a member of NVIIDIA's Inception Premier Program.
- In 2022, CVEDIA announced it is working with Qualcomm on Edge AI solutions for the Internet of Things.
- The year before, CVEDIA announced it had successfully solved the 'domain gap' challenge, highlighting its ability to deploy fully synthetic AI that performs without algorithms trained on real data. The company has claimed a precision improvement of 170% and a gain of 160% on recall over benchmarks.
- Another 2021 accolade encompasses the collaboration with Cubic Transportation Systems (CTS) aimed toward scaling deep learning models for GRIDSMART omnidirectional cameras and other intelligent transportation systems (ITS) solutions.
- In 2018, FLIR invested in CVEDIA to develop its synthetic data technology. Later that year, the company began commercializing its offerings developed using proprietary synthetic imagery.

Executive Team 1/2

Arjan Wijnveen

Co-Founder & CEO

Experience:

- CTO at Hulkshare
- CEO at BounceTek
- Co-Founder & Lead Developer at BAS Efficiency
- Java Developer at MarketXS
- Frontend Developer at ISM eCompany

Academic Background:

- N/A

Rodrigo Orph

Co-Founder & CIO

Experience:

- CTO at Hulkshare
- Founder & CEO at overflow.biz
- Senior Software Developer at Youngtek and Synergy Media

Academic Background:

- N/A

Executive Team 2/2

Maurizio Margiotta
CTO

Experience:

- Progressed to CTO at Cvedia (current)
- CTO at Link Up Advertising
- CTO and Creative Director at Blue River Arts
- Founder & CEO at Edilia2000 Srl and Evolution City Group S.A.S.

Academic Background:

- N/A

Precision Agriculture

Precision agriculture is a management strategy incorporating high-tech tools such as sensors, GPS, robots, mapping tools, and data analytics for maximized economic return and minimized environmental impact. The concept usually combines two types of technology, those aimed at ensuring accuracy with those focused on enhancing farming operations.

Notably, precision agriculture technologies are intended to ease farmers' decision-making processes regarding crop rotation, optimal planting or harvesting times, and soil management. The end goal is improved crop productivity and efficiency.

Data from Valuer:

Average Year of Inception of Precision Agriculture companies:

2016

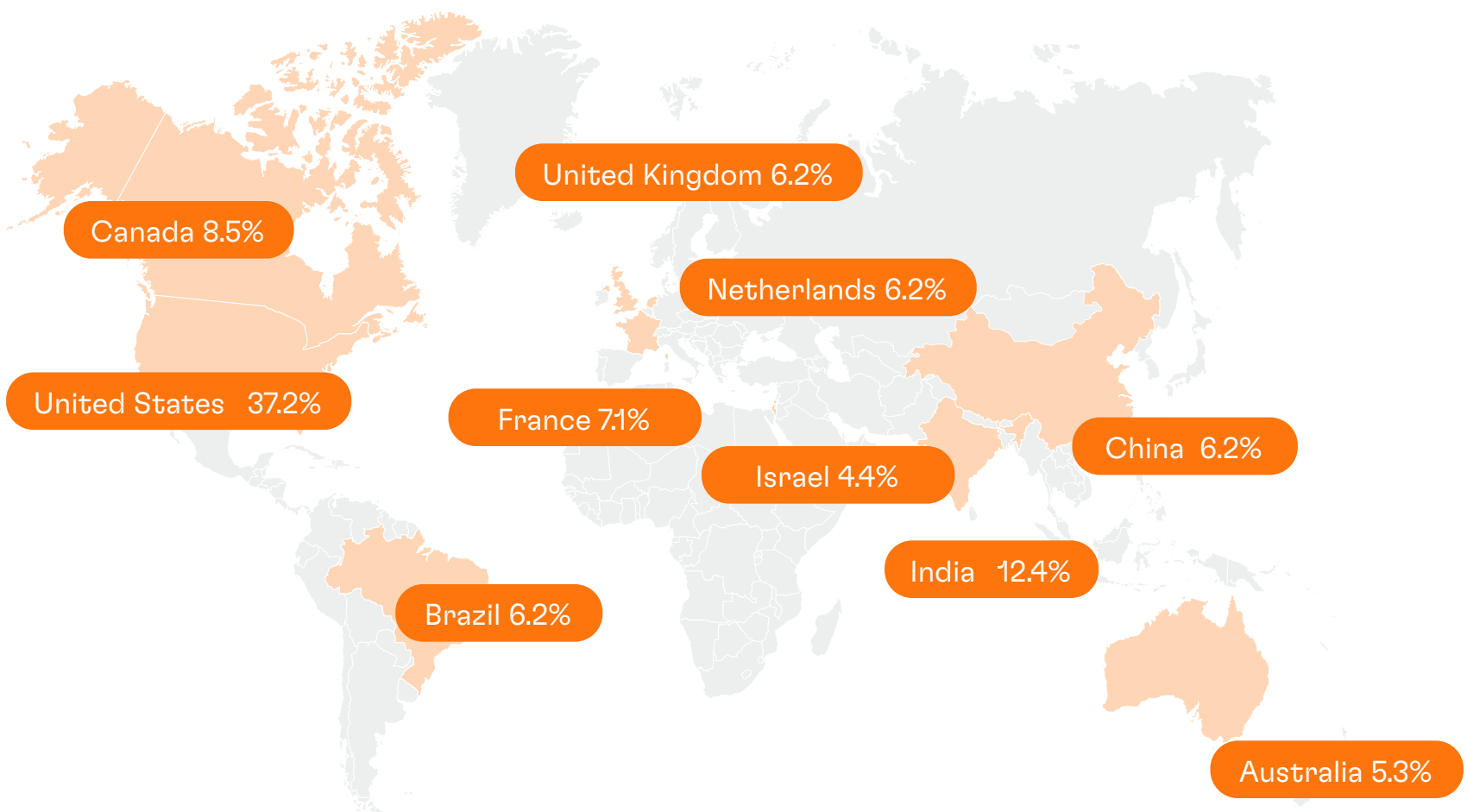
Average Funding of Precision Agriculture companies:

$15,118,939

Maximum Funding of Precision Agriculture companies:

$334,400,000

10 countries with the largest number of Precision Agriculture companies on Valuer:



Company Highlight:

Prospera Technologies

Year of inception: 2014	Country: Israel
Company stage: Established	Funding: Acquired
Team size: 101 to 250	Website: prospera.ag

Prospera Technologies is an AgTech company that utilizes Artificial Intelligence (AI) and computer vision to give growers insights into the crops' entire growth cycle and the perimeters that might affect it. Empowered with data-based knowledge, clients can take pre-emptive measures against agricultural challenges such as pests and diseases.

The company was founded in 2014, and as of 2021, it has been operating as a Valmont Industries company. Headquartered in Tel Aviv (Israel), Prospera Technologies currently operates with a team of nearly 150 members.

Customers:

This company has not disclosed information for its client list.

Business Model

The company's business model is centered around the following characteristics:

- Prospera Technologies develops software that utilizes machine learning and computer vision algorithms to analyze the data collected by hardware-agnostic sensors.
- The company's offering caters primarily to growers, helping them monitor and control their production processes and make informed and data-driven decisions.
- In May 2021, the company announced that its long-term collaboration with Valmont Industries would culminate in an acquisition. By Q2 of 2021, Valmont was expected to invest $300 million as part of the acquisition deal.

Value Proposition

The company communicates the following as its main value propositions:

- Prospera Technologies enables a data-driven approach to crop management, empowering clients with all-encompassing analytics of their food production processes.
- Equipped with predictive analytics, Prospera clients can monitor and optimize the growth of their crops throughout the entire life cycle, thus gaining higher yields with fewer resources.
- The technology has already helped growers discover challenges like leaking boot gaskets and infestation with Colorado potato beetles in their early phase, thus allowing for its resolution before they become major problems.

Product Portfolio

Prospera Technologies offers a proprietary, advanced Artificial Intelligence (AI) technology aimed at optimizing the agriculture industry. Tackling such a complex challenge requires observing various parameters and their interactions. To that end, Prospera combines machine learning, computer vision, and experts' knowledge and practical know-how.

The Prospera approach encompasses two underlying processes:

- Perception: Initially, the company collects operational and visual data produced on the field via various methods and hardware-agnostic tools, including climate and soil sensors, proximal, drone and satellite imaging, as well as scouting and field machinery data to gain insights into areas like irrigation, pests, diseases, fertilization, crop protection, harvesting and more.
- Learning: Prospera's machine learning-based engine is cloud- and edge-based, allowing for constant agronomic and operational data processing to derive actionable insights.

These processes, in turn, lead to several benefits, including:

- Pests and disease detection: Prospera's technology analyzes thousands of data sets from cameras installed on drones or other machinery to detect the presence and extent of certain pests or diseases.
- Field irrigation issues detection: The company uses multispectral imaging to analyze images from satellites, drones, and planes to identify areas of overwatering, underwatering, or machinery malfunctions.
- Yield prediction: Prospera combines machine learning and computer vision algorithms to analyze leaf-level images that help track the growth cycle and detect areas of replanting.
- Crop treatment improvement: The technology can accurately pinpoint areas affected by a particular issue and its concrete extent, thus alerting growers early so they can react promptly.
- Crop nutritional deficiency prevention: Using Prospera's technology, growers can get an undisrupted in-field overview and in-depth insight into problems that cannot be identified with the naked eye but are critical to crops' nutritional value, like water consumption and stress, to name a few.
- Field intelligence improvement: In collaboration with Valley®, a Valmont Industries company focused on irrigation, Prospera offers the Valley Insights® solution. This solution utilizes aerial imagery and pivot-mounted sensors to track irrigation and crop health and inform clients timely on any potential issue.

Sustainability

Aiming to digitally transform the agricultural sector, more specifically, farm production, Prospera has developed a solution combining advanced data analytics, computer vision, and AI. Its technology is expected to bring farmers actionable insights that could stimulate benefits such as healthier crops and higher yields and profits.

The company's offering can potentially help in achieving these Sustainable Development Goals (SDGs):

- SDG 2 (End hunger, achieve food security and improved nutrition and promote sustainable agriculture): By empowering agricultural clients with data, Prospera aids in achieving the Zero Hunger goal, most notably in terms of increasing food production and, essentially, the sector's productivity and efficiency.

Market Opportunities

The company is operating in the Artificial Intelligence (AI) in the agriculture market.

- According to Markets and Markets, this market is expected to grow at a CAGR of 25.5% in the 2020-2026 forecast period and reach a value of $4 billion by 2026.
- Key growth drivers of the market include increasing data generation via sensors and aerial images and enhanced productivity due to deep learning technology coupled with government support for developing novel agricultural technologies.
- The software segment is expected to hold the largest market share on account of the increasing utilization of AI as well as the integration of mobile technologies with farming techniques to satisfy the growing real-time data management demand.
- In terms of location, the Americas region is forecasted to dominate the market, whereas APAC is expected to grow at the highest rate.
- Prospera Technologies has been featured in the report among the key players, alongside International Business Machines Corp, Deery & Company, Microsoft Corporation, Farmers Edge, and The Climate Corporation, among others.

Achievements

To date, the company has achieved the following milestones:

- In 2021, Prospera was recognized as a Gartner Cool Vendor in AI for Computer Vision.
- After a two-year ongoing strategic partnership, Valmont Industries acquired Propsera Technologies in May 2021, investing a total of $300 million.
- During 2021, Prospera was listed among CB Insights' World's Top 100 AI Companies and Fast Company's World Changing Ideas.
- Additionally, Prospera was named Best Innovation in Deep Learning by CognitionX.
- The year before, in 2020, the company was named a World Economic Forum Technology Pioneer.
- The company also announced a strategic partnership with Bayer with the aim of developing integrated digital solutions for vegetable greenhouse growers.
- In 2018, Prospera was recognized as a New Product Innovation in AgTech by Frost & Sullivan.

Executive Team

Daniel Koppel

Co-Founder & CEO

Experience:

- Technology Consultant at Accenture

Academic Background:

- BSc in Computer Science from the Hebrew University of Jerusalem

Raviv Itzhaky

Co-Founder & CTO

Experience:

- Algorithm Developer at BioCatch
- Signal Processing Engineer at IDF

Academic Background:

- MSc in Applied Physics from the Hebrew University of Jerusalem
- BSc in Physics from the Hebrew University of Jerusalem

Smart Data Capture

Smart data capture (often referred to as automated or intelligent data capture) is the process of extracting and accessing real-time data from barcodes, text, IDs, and objects by leveraging AI-based software. It provides benefits in terms of decreasing manual labor and costs, as well as human error.

The software can digitize the extracted data and translate it into actionable insights to optimize business and decision-making processes.

Moreover, these insights can help scale operations, increasing the business's agility and flexibility in responding to demand, thus improving overall customer experience.

Data from Valuer:

Average Year of Inception of Smart Data Capture companies:

2014

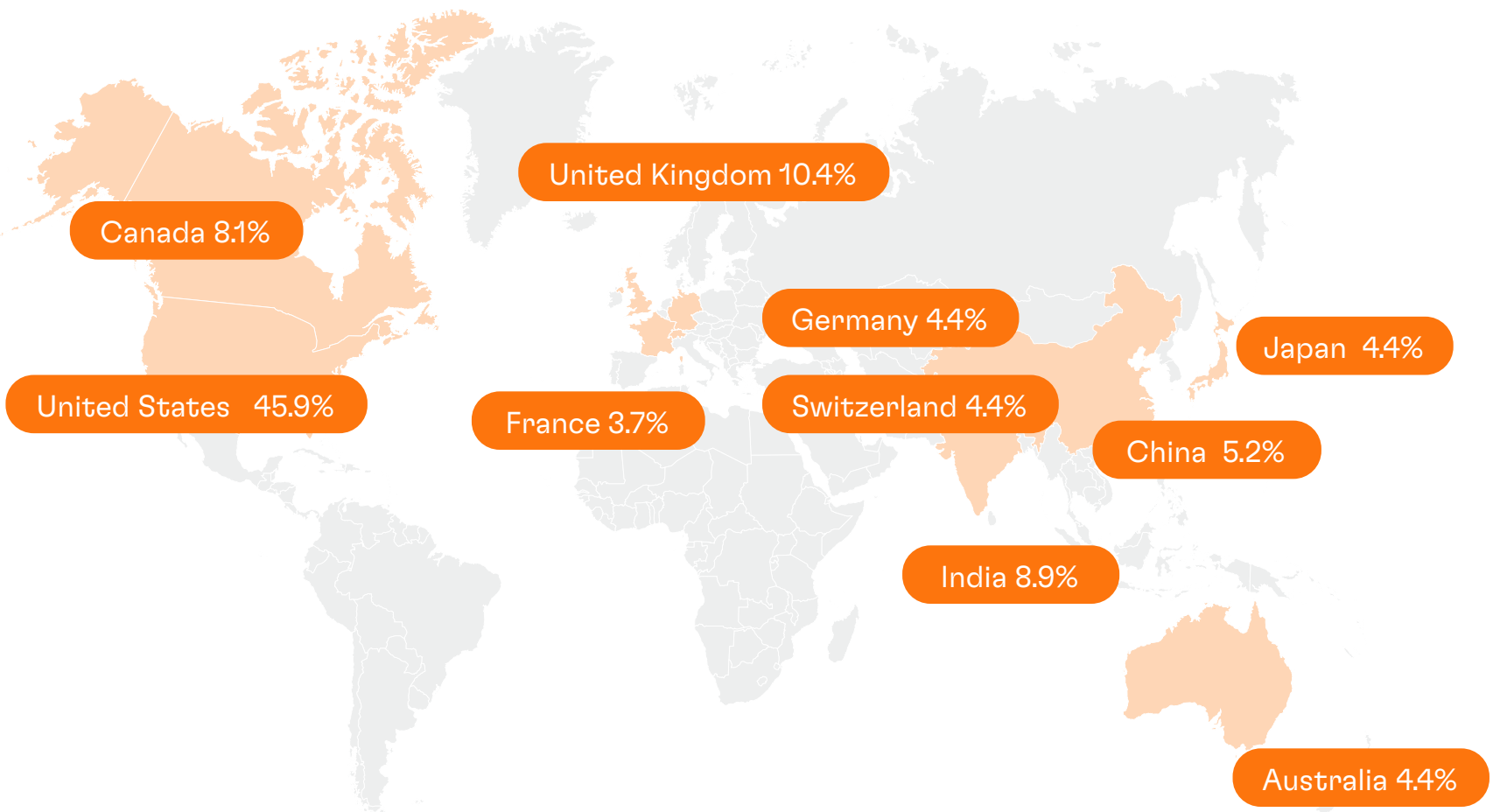
Average Funding of Smart Data Capture companies:

$8,906,184

Maximum Funding of Smart Data Capture companies:

$214,550,000

10 countries with the largest number of Smart Data Capture companies on Valuer:



Company Highlight:

Scandit

Year of inception: 2009	Country: Switzerland
Company stage: Established	Funding: 273,141,155 USD
Team size: 501 to 1000	Website: scandit.com

Scandit is a software company that develops smart device scanning solutions powered by computer vision. Its flagship offering, the Smart Data Capture platform, enables users to interact with physical items via smart devices such as smartphones, digital eyewear, drones, and robots. The software captures physical data from barcodes, objects, texts, and IDs to automate end-to-end processes and provide actionable insights.

Founded in 2009, the company currently employs approximately 600 members, operating from the HQs in Zurich (Switzerland) and regional offices in Boston (US), London (UK), Warsaw (Poland), Tampere (Finland), and Tokyo (Japan).

Customers:

Apple, Hitachi Solutions, Movista, Samsung, Oracle

Business Model

The company's business model is centered around the following characteristics:

- Scandit is B2B- and B2G-oriented, targeting customers in healthcare, retail, air travel, manufacturing, field service, and post and parcel delivery.
- Its technology also caters to car dealerships, event organizers, government agencies, banks, and fitness businesses.
- Scandit generates revenue via licensing. The company offers tailored subscription plans with custom quotes appraised by the number of active devices, add-on capabilities, and type of user and use case. The subscription entails technical specialist support, practice consultation service during the trial and implementation and live service support.
- Additionally, the company offers bundle pricing if the user seeks to deploy the software across several workflows.
- Scandit's offering extends to a partnership program, referred to as Scandit Collaboration & Alliance Network (SCAN), designed to help members accelerate their growth and broaden their customer reach. The company offers three types of programs - silver, gold, and platinum - featuring numerous perks, including strategic support, a designated Scandit partner manager, quarterly business reviews, sales and marketing support, etc.

Value Proposition

The company communicates the following as its main value propositions:

- Scandit's technology can be implemented into any application powered by a camera-equipped smart device. It is suitable for enterprise-grade applications, featuring market-leading scan accuracy and scalability to support large implementations.
- The software can process up to 480 scans per minute. Furthermore, the solution is underpinned by advanced decoding algorithms for handling torn and tough-to-read barcodes and functionalities conducting wide-angle, long distances, and low-lighting scanning.
- In addition, it supports over 20,000 smart device models, including gadgets that lack autofocus, while issuing regular software updates to ensure proper functioning.
- The company's Smart Data Capture supports a broad range of hardware and software platforms and can be pre-integrated on various partner platforms such as Oracle XStore, Epic Rover, and SAP Fiori.

Product Portfolio 1/2

Scandit's main offering is the Smart Data Capture platform. The solution is powered by computer vision technology for recognizing and analyzing barcodes, text, images, and ID documents. The software caters to workers, customers, and businesses alike, allowing them to gain actionable insights and automate end-to-end processes. Compared to dedicated devices, the platform can scan up to three times faster, even in challenging light, at difficult angles, with damaged labels, and across multiple codes on any smart device. Its core functionalities encompass:

- Barcode Scanning - empowered by barcode reader technology, the software delivers high-performance and cost-efficient smart data-capturing capabilities. It is integrable with native mobile and web apps and supports a broad range of operating systems, frameworks, 3rd party systems, and OEM devices. It also functions on browser or e-commerce platforms, namely SAP/hybris, Magento, and Demandware.
- ID Scanning - an identity verification solution that combines barcode scanning and optical character recognition to transform camera-equipped smart devices into scanning gadgets for passports, ID cards, visas, or driver's licenses. The software can perform with a 99.5% scan accuracy rate for IDs with PDF417 and 95% for other documents. The software encrypts the ID data and entails less typing while reducing human error and creating a reliable audit trail.
- Text Recognition - an enterprise-grade optical character recognition (OCR) solution for reading alphanumeric codes at any text size, font, or color, including IBANs, Automotive VINs, LOT, and REF numbers. It can aid air travel, retail, automotive, healthcare, banking, and post and parcel businesses.

MatrixScan Smart Enablers

MatrixScan is an extended feature of the Smart Data Capture platform, encompassing a selection of smart enablers that can locate, track and decode multiple barcodes simultaneously. It accelerates the inventory counting workflow by ten times, thus enhancing the efficiency of inventory count, receiving goods, and shelf management. The feature is particularly beneficial for applications that require scanning multi-code labels. MatrixScan can be extended with:

1. MatrixScan Count - an out-of-the-box barcode scan-and-count solution for received goods and inventory, suitable for retailers and post/parcel offices. The scanner enhances worker productivity, minimizes human error, and maintains accurate stock levels.
2. MatrixScan Augmented Reality - offers an AR overlay showcasing captured barcode information. It empowers frontline workers with access to real-time, actionable insights poised to ease the inventory management process.

Product Portfolio 2/2

ShelfView

ShelfView is a cloud-based retail shelf management solution delivering data capture and analytics capabilities for greater shelf visibility and intelligent and efficient store management operations. The feature is underpinned by Scandit Smart Data Capture and object recognition technology. It conducts monitoring via mobile devices or an autonomous floor scrubber, essentially keeping track of product prices and promotions and maximizing inventory accuracy. The ShelfView enables retailers to remove repetitive tasks from the staff and assign them more value-adding tasks while improving the customer experience by accurately placing, pricing, and promoting in-store and online products.

Sustainability

The company's offering does not have a clear focus on sustainability.

Market Opportunities

The company is operating in the global automatic identification and data capture (AIDC) market.

- According to Grand View Research, this market was valued at $54.34 billion in 2022 and is poised to reach $131.48 billion by 2023.
- Registering a CAGR of 11.7% over the forecast period, the market is expected to remain lucrative due to the rising requirement to minimize manual data entry and capture errors, advancements in AIDC technology, and the growing proliferation of advanced AIDC systems.
- Hardware was the leading segment in 2021, accounting for more than 63% of the global revenue shares. Its growth was propelled by the surging demand for AIDC hardware solutions such as RFID tags, scanners, barcoding products, OCR systems, smart cards, magnetic stripe cards, and biometric solutions, to name a few.
- In terms of region, North America was the dominant market player, whose position can be attributed to the growing awareness and high adoption of AIDC devices, coupled with the increased government legislative and investment incentives, especially in retail, healthcare, and manufacturing verticals.
- Notable market players include Zebra Technologies Corp, Datalogic S.p.A, Bluebird Inc, B.O.S. Better Online Solutions LTD, Honeywell International Inc, NEC Corporation, and Cognex Corporation, among others.

Achievements

To date, the company has achieved the following milestones:

- In 2022, Scandit closed a $150 million Series D, leading the company to a valuation in excess of $1 billion and a unicorn status. The round was led by Warburg Pincus with Atomico, Forestay Capital, G2VP, GV, Kreos, NGP Capital, Schneider Electric, Sony Innovation Fund by IGV, and Swisscom Ventures as participating investors.
- CB Insights featured Scandit in its 2022 Retail Tech 100 list, showcasing the 100 most promising B2B retail tech companies worldwide.
- Another 2022 accolade was the partnership with River Island to modernize its store operations. By deploying the Smart Data Capture platform, the fashion retailer expects to enhance workflows, introduce new services, and empower store associates to improve the overall customer experience.
- The company was awarded the 2022 Frost & Sullivan's Technology Innovation Leadership Award. Prior to this accolade, in 2019, the company was commended by the consultancy giant for exemplary innovation and superior technology in retail automation.
- In 2021, Scandit signed a national contract with NHS Digital to provide data capture services as part of the UK's COVID-19 measures. The collaboration was poised to help the NHS deliver tests promptly, cope better with the increased demand and accommodate services at surge testing sites.

Executive Team 1/2

Samuel Mueller, PhD
Co-Founder & CEO

Experience:

- Researcher at ETH Zurich
- Progressed to Corporate Researcher at IBM Zurich Research Laboratory
- System Engineer at Swiss Re
- Consultant at Beringer & Partner AG

Academic Background:

- PhD in Computer Science and Temporal Logistics from ETH Zurich
- MA in Financial Economics from the University of Zurich
- MSc in Computer Science from the University of Zurich

Christian Floerkemeier, PhD
Co-Founder, CTO & VP of Product

Experience:

- Associate Director of the Auto-ID Laboratory at MIT
- Head of Software Development at Ubiworks
- Co-Founder of Fosstrak

Academic Background:

- PhD in Computer Science from ETH Zurich
- MEng in Electrical and Information Science from the University of Cambridge
- BEng in Electrical Engineering from the University of Cambridge

Executive Team 2/2

Christof Roduner, PhD

Co-Founder, CIO & VP of Engineering

Experience:

- Progressed to CIO & VP of Engineering at Scandit (current)
- Senior Research Scientist at ETH Zurich
- Co-Founder & Project Co-Lead at Fosstrak Open Source RFID

Academic Background:

- PhD in Computer Science from ETH Zurich
- MSc in Business Administration and Computer Science from the University of Zurich
- BSc in Business Administration and Computer Science from the University of Zurich

About IoT Community

(Internet of Things Community)

The IoT Community is a privately held UK based and registered corporation, serving as the world's largest and longest-standing CxO community of senior business leaders and IoT practitioners comprising 30,000+ members globally. Founded in 2015, the function of the community is to focus on the adoption and application of IoT in commercial environments, seeking to understand and contribute to applying the technology or overcoming the wide variety of barriers, inhibitors, and technical and operational issues.

The IoT Community aims to be the place to be or place to come for IoT information and insights on the implementation and operation of IoT systems and applications. Their focus is on accelerating the adoption and implementation of IoT systems and applications, making these processes easier, widespread, and secure.

For more information, visit:

iotcommunity.net

@IoTCommunity
@IoTChannel
#IoTCommunity

IoT Community

About Valuer

Valuer's vision is to fuel and foster the world's innovation by mapping global innovation activities. By combining data about startups and technologies, they identify and present patterns to forward-thinking companies, startups, universities, and investors alike. Clients can use Valuer to dive headfirst into identifying relevant companies and technologies.

The company organizes +20 million data points to spot trends, discover new technologies, and map industries. They use AI and machine learning to analyze, cluster, and identify data, and human researchers to enrich that data. Clients can start at the macro level by exploring industries and technologies and then move on to identifying relevant companies. Or start at the micro, company level and from there understand the industry and how it associates.

Valuer is a one-stop shop for innovation and opportunity discovery. Visit valuer.ai to find new technologies and collaboration opportunities, uncover strategic suppliers or find and follow acquisition targets.

For more information, visit:

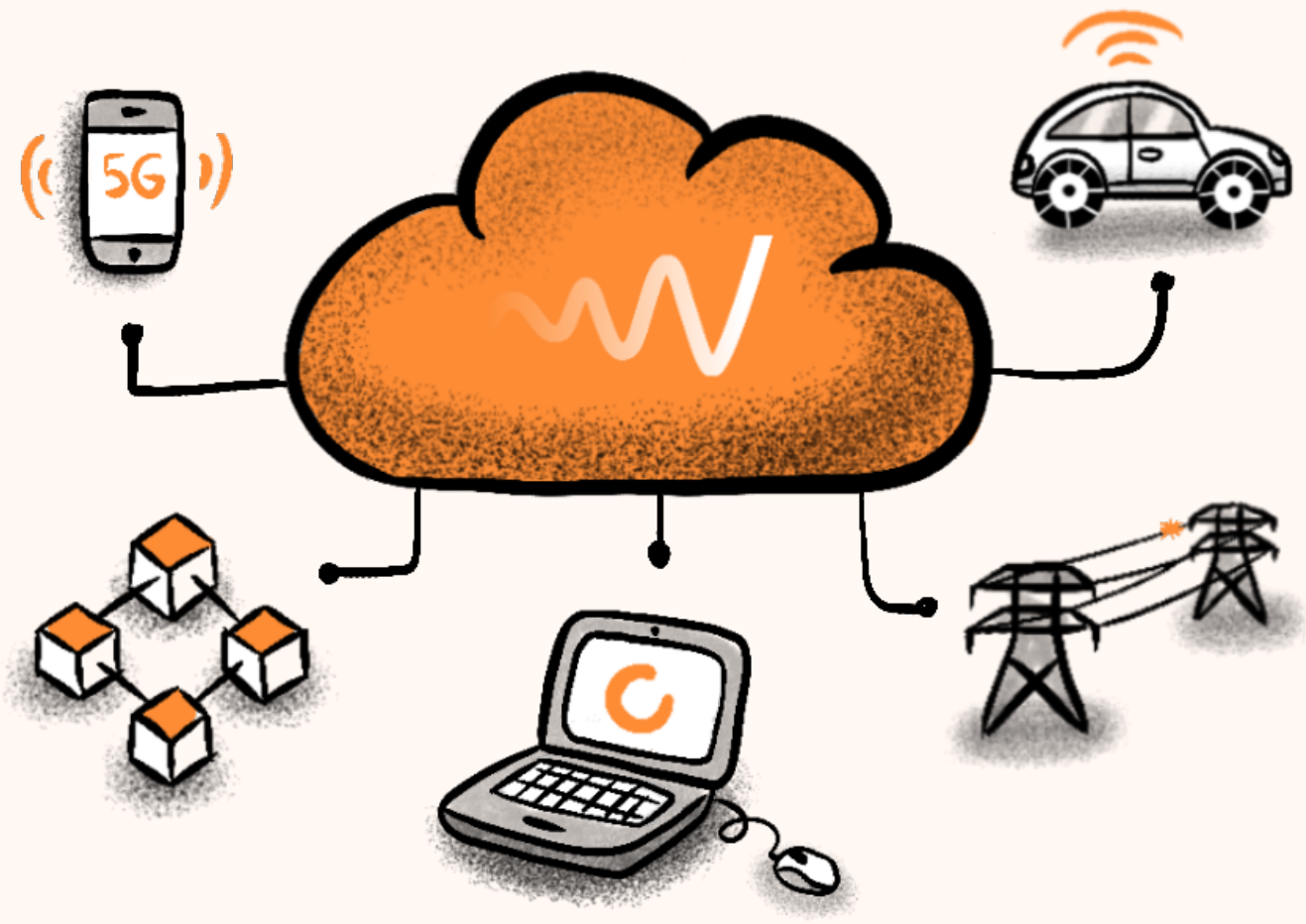
valuer.ai

@ValuerAI

ValuerAI

Find innovative technologies that will give your company competitive advantage

Try Valuer for free



Valuer

Valuer.ai · Kristianiagade 7 · DK-2100 Copenhagen · Denmark · contact@valuer.ai