

# INVESTOR FACT SHEET

**Company** NVISO Australia Pty Ltd (ACN 627 584 847) (**NVISO**)

**ASX Ticker** NVISO is a private company and shares are not yet publicly trading on the ASX.

**Shares on Issue** 62,623,864 Ordinary Shares (as of July 14th 2022)

**Becoming a Shareholder** If you are interested in becoming a shareholder of NVISO please **register your interest in becoming a shareholder here** with our lead manager.

**Presentations**

- [Latest Company Presentation \(July 2022\)](#)
- [Watch Recording of Neuromorphic Update Webinar \(July 2022\)](#)

**Business Description** NVISO is at the forefront of a revolution in AI-driven human machine interfaces. As AI research and data expand exponentially, the opportunity emerges to teach machines to understand humans better. We combine advanced AI and machine learning with cutting edge science to decipher complex human behaviour and enable safe, secure, and personalized interactions with autonomous systems.

- [Global leader in Human Behaviour AI](#) for edge devices. Its software is licensed in multiple applications where AI-driven human machine interfaces are mission critical such as connected and autonomous vehicles with interior monitoring systems, patient monitoring/assessment in healthcare, and intelligent devices for smart living.
- [Data-centric AI software for edge devices](#) designed for ultra-low power, always-on, battery powered devices. Partnerships with leading neuromorphic hardware providers ([BrainChip](#)) and commercial availability of neuromorphic EVKs.
- [Partnerships with major global manufacturers](#) for consumer devices, vehicles, robotics, and healthcare products and services, [Panasonic](#), [Siemens Healthineers](#) (many others under NDA).

- Market leading, proven technology and proprietary IP: NVISO Human Behaviour AI Software Development Kit (SDK) detects and predicts human behaviours using sensors and edge devices. It creates AI Apps from larger proprietary datasets of human behaviour providing AI Solutions solving industry problems at the edge.
- Iconic global customer base: NVISO initially targets areas where understanding human behaviour is mission critical to user centric products and services. Smart Living is a solution that aims to make an environment of the future that improves people's quality of life. Smart Health can transform the healthcare industry by analyzing vast amounts of data with incredible accuracy. Smart Mobility can enable safer, more personalized, and convenient experiences for the mobility services of the tomorrow.
- Extraordinarily large market size and opportunity: AI has been identified as one of the largest growth opportunities globally, encompassing all industries and demand for AI-enabled edge and IoT devices is forecast to growth at double digit growth rates over this decade driven by 5G, IoT sensor data growth, and consumer experience expectations. Target verticals in mobility, healthcare and consumer devices have significant size. These target markets offer opportunities driven by both technology innovation and secular tailwinds. Due to privacy, data security, latency, power consumption, and data bandwidth, demand for AI capabilities will shift from cloud to edge devices where data is captured and processed on device without requiring an internet connection.
- Highly scalable technology platform with wide application to the extreme edge: NVISO's AI platform is built for scalability as the business grows and can be applied to wide range of industries and applications, creating exponential growth opportunities as both the number of AI Apps (data driven) and AI Solutions (platform and industry driven) scale. Partnerships with first-to-market neuromorphic computing providers such as BrainChip allow NVISO to release first-to-market neuromorphic computing SDKs accelerating the adoption of its Human Behaviour AI SDK in low latency and low power applications such as robots, electric vehicles, wearables, drones, medical devices, and any other battery powered devices.
- Interoperable with neuromorphic computing: NVISO software is interoperable with neuromorphic computing hardware reaching throughput speeds of over 1000 FPS, latencies below 1ms, and model store sizes below 1MB. Neuromorphic processors are expected to accelerate the adoption of AI at the extreme edge where AI software is run at the sensor level opposed to transmitting data off-device to the cloud for processing.
- Attractive business model and highly profitable at scale: Revenue generated by selling software licenses, cloud-connected services and professional service fees. NVISO is expected to be highly profitable at scale with high gross profit margins and a largely fixed cost business. NVISO is a trusted business partner and deeply embedded into its client's systems, processes and devices resulting in high lifetime value of customers.
- Experienced management team: AI-driven human machine interfaces are at an inflection point as AI shifts from a cloud-based model to extreme edge computing. The space increasingly is a strategic area of focus for establishes companies. As one of the industry leaders in Human Behaviour AI, NVISO is

**Commercial Achievements Past 12-months**

- [US Patent Awarded](#) granted a US Patent for Human Behavioural Profiling from image processing using Artificial Intelligence.
- [NVISO and Tobii](#) to collaborate to accelerate innovation in Interior Monitoring Systems for Smart Mobility.
- [NVISO and Panasonic](#) sign license agreement to embed Human Behaviour AI in companion robots for Smart Living.
- [NVISO and BrainChip](#) partner on Human Behavioral Analytics in automotive and edge AI devices.
- [NVISO and Siemens Healthineers](#) collaborate to apply Human Behaviour AI in medical imaging applications for Smart Health.
- NVISO releases first [Neuromorphic AI App](#) and [Neuromorphic AI Solution](#) using BrainChip Akida platform.
- Japanese Semiconductor Manufacturer starts evaluation of NVISO Human Behaviour AI SDK for Neuromorphic Computing
- NVISO starts discussions with strategic commercial partners for distribution of its Human Behaviour AI SDK.
- NVISO announces interoperability with Neuromorphic Processors

**Near Term Industry Catalysts**

- 6th July 2022 the new Regulation (EU) 2019/2144 of the European Parliament and of the [Council has mandated driver drowsiness and attention warning \(DDAW\) systems](#) for all new type-approved motor vehicles of categories M and N from 6 July 2022 and from 7 July 2024 for all new vehicle registrations. This regulation is expected to accelerate the adoption of AI within interior monitoring systems of drivers and occupants.
- [Panasonic "Nicobo" companion robot production ramp-up](#) is expected over the next 6-months targeting the Japan market. First customers samples shipped in [June 2022](#) with mass production expected to be launched before the end of the year. This is the first mass production consumer edge product using NVISO's Human Behaviour AI SDK and is expected to trigger a range of other customers in Japan in development and evaluation to move towards production in 2023 and onwards.
- [Neuromorphic hardware commercial availability to accelerate Edge AI software uptake](#) is expected to accelerate in the next 12-months. A coming #neuromorphic hardware revolution is brewing with first-to-market [BrainChip](#) neuromorphic processor, and soon to follow [GrAI Matter Labs](#), and [Axelera AI](#) who have announced the availability of silicon with neuromorphic computing. These new AI hardware platforms offer NVISO customers additional price/power/performance points which can accelerate the adoption of its AI App and Solution offerings to major global manufacturers. NVISO has started discussions and evaluation with Semiconductor partners looking to accelerate the adoption of neuromorphic computing through combined software / hardware offerings.

**Industry**

NVISO operates in the Artificial Intelligence (AI) industry and more specifically

the market for affective computing and emotion AI. The NVISO Group has operations internationally across the Asia-Pacific and Europe, supplying AI products and services to customers seeking to enable human behavioural analytics and emotion recognition features in their products and services. Products and services for the human behaviour and emotion recognition AI market include such items as Image sensors, SDKs (Software Development Kits which include AI Algorithms), and professional services used for the development and customisation of AI systems to meet customer needs. NVISO operates in the following market segments:

The **Affective Computing Market** was valued at USD 867.2 million in 2019 and is expected to reach a value of USD 5367.3 million by 2025, registering a CAGR of 35.5% during the forecast period (2022 – 2031).

- It is currently dominated by a few players with their technological expertise in AI technology. The global market is expected to be nearly consolidated in nature, and the major players with a prominent share in the market are focusing on expanding their customer base across foreign countries by leveraging on strategic collaborative initiatives to increase their market share and their profitability. Affectiva Inc., CrowdEmotion Ltd., Kairos AR, Inc., NVISO, are some of the major players present in the current market.
- Allows a computational device to detect and react in real-time to a user's nonverbal emotional cues, such as gestures, motions, physiology, and other behaviors.
- With the advancement in computing capacity, improved communication technology, and the emergence of new solutions, such as AI, new possibilities are being realized, which were earlier limited due to the scarcity of resources.

The **Edge AI Software Market** is projected to Reach US\$ 8,049.8 Million by 2027, driven by factors such as advancements in AI-powered IoT (Internet of Things) for intelligent systems and smart applications.

- Edge AI is a system which consists of sophisticated machine learning algorithms that processes the data generated by a local hardware device.
- The market is majorly driven by factors such as advancements in AI-powered IoT (Internet of Things) for intelligent systems and smart applications and use of edge AI computing in 5G network which enables better data control, reduced costs, quick insights, and continuous operation.
- Increasing demand and trend of wearable devices such as smart watches and smart glasses uses the edge AI technology to provide real time analysis and response.
- AI enabled home cameras helps in detecting activities with real-time face recognition.
- Adding Machine Learning (ML) to Edge AI software can enhance IoT data analytics and decision making and is thereby providing a lucrative opportunity for market expansion.

The global **Social Robotics Market** is expected to reach USD 11.24 billion by 2026, registering a CAGR of 34.34% during the period of 2021-2026

- Social robots work more closely with humans; hence, they need to respond to the users and adapt their behaviors.
- Social robots assist care homes by reducing loneliness, connect with doctors, monitor activities, and support caregivers.
- Growing concerns regarding the care and attention offered to the elderly population and the expanding need for workforces have influenced the adoption of these robots. For instance, the Japanese government anticipates a shortfall of 380,000 specialized workers by 2025 and has been funding the development of eldercare robots.
- Playing and learning with robots also offer additional benefits for students with disabilities.
- According to WHO, neurological disorders are projected to increase to 103 million in 2030, approximately a 12% increase. The increase in neurological disorders is leading to the growth of rehabilitation robots. Such robots ensure the movement in rehabilitation exercises is repeated in the same way each time, training the brain to enable muscles to carry out the activities alone.
- Social robot navigation is programmed to learn from human observations or demonstration of behavior around them.

### Key Trends Driving Growth

- Growth in the Deployment of Cameras: The forecasted growth in the deployment of cameras in vehicles is projected to grow at a CAGR of 9% between 2021 and 2026, from USD\$5 billion in 2020. This represents a significant market opportunity for NVISO to implement its human behavioural analytics and emotions AI technology. Furthermore, the continued growth in the number of mobile phones equipped with cameras will also enable the implementation of additional vision-based AI systems.
- Advancement in Edge Computing: The advancement and growth in deployment of embedded computing platforms will likely enable wider implementation of human behaviour analytics and emotion AI systems that operate on edge devices. The value of the edge computing market was estimated at USD\$22.8 billion in 2020 and is expected to reach USD\$109 billion in 2026.
- Emergence of 5G: 5G will likely enable higher levels of AI implementation due to its ultra-high speed, ultra-low latency and ultra-high density characteristics. This supports the possibility of the deployment of widespread networks of low power sensing devices at the edge. These edge devices can be equipped with distributed AI providing localised initial processing of sensed data. Local pre-processing has key advantages in both reducing transmitted data load leading to energy savings and enhanced security as only necessary extracted information is transmitted. The global 5G infrastructure is expected to grow from USD \$12.9 billion in 2021 to \$115.4 billion by 2026.
- AI Adoption by Industries: It has been observed in numerous reports that the adoption of AI by various industries has accelerated since the outset of Covid-19. It is observed that AI and analytics are boosting productivity, delivering new products and services, accentuating corporate values, addressing supply chain issues, and fueling new start-ups.
- Trend towards AI-Driven Human Machine Interfaces: The days when people were restricted to interacting with an IT system or a computer using only a

keyboard, or a mouse are over. Today, with the widespread usage of mobile devices with touch screens, or modern speech recognition technology systems (e.g., message dictation, entertainment system control, or destination entry for a car navigation system) users have come to expect efficient and intuitive Human Machine Interfaces. Consequently, the use of computer vision to understand body language, people’s status, their activities, and interactions with objects are seen as a long-term trend.



**Industry Segments**

**Smart Living** is a solution that aims to make an environment of the future that improves people’s quality of life.

- Build and deploy consumer-grade, AI-powered robots that scale. The NVISO Human Behaviour SDK includes building blocks and tools that accelerate robot developments that require the increased perception and interaction features enabled by AI including presence and identity detection, object detection, and emotion and facial expression recognition.
- A wide range of opportunities exist for improving quality of daily life through the implementation of Smart Living technologies. NVISO is addressing this through the provision of Human Behavioural AI to manufacturers of such systems, initially targeting the Social Robot sector of the market providing technology to improve the interaction between humans and the devices they wish to interact with. Social Robots are a category of robotic device which are aimed at providing assistance in daily life.
- Social Robots are designed to interact in a natural manner and work closely with humans. They must perceive and respond to a user’s state in terms of their behaviours, needs, mood, level of tiredness and so on. For this purpose, the robots are equipped with sensors and cameras. A key to using the data from these is visual comprehension and NVISO’s human behavioural analytics AI delivers the capabilities to support this. It does this through its range of AI Apps providing visual observation, perception and semantic reasoning capabilities, the results of which can be used in decision making processes.

**Smart Health** refers to the use of technology in the healthcare industry to deliver more favourable patient outcomes

- Within smart health, artificial intelligence is identified to play a key role. Artificial Intelligence in healthcare represents a collection of multiple technologies enabling machines to sense, comprehend, act and learn.
- Unlike legacy technologies that are only algorithms or tools that complement a human operator, healthcare AI has the capability to augment human activity – taking over tasks that range from medical imaging to risk analysis, or to diagnosing health conditions.
- NVISO currently offers AI technology targeted at a number of data centric use cases in several segments of the market, namely Health Assessment, Patient Monitoring, and Workflow Support.

**Smart Mobility** is broadly understood as the connection of various elements of technology and mobility.

- Next generation mobility requires AI, from self-driving cars to new ways to engage customers.
- Occupant monitoring system monitors the passengers of the vehicle to help ensure that the driver attention is focused on the road ahead. While first generation driver monitoring systems focused on eye related activity of drivers to make sure they have eyes on the road or are not too drowsy to drive, more advanced monitoring systems need to understand all relevant activities (not just desired activities such as the driver's hands being on the steering wheel, but also potentially distractive activities, for example reading a book or operating a mobile phone).
- In the intelligent cockpit, it is not only the driver who is the focus of attention. The camera can be positioned in such a way that all seats are in its field of vision. The system can detect the presence of any other occupant, and can thus deactivate the airbag if, for instance, a child safety seat is present. IMS enables in-vehicle systems to sense their occupants' emotional states and gestures to provide personalized experiences in the transition to automated driving.



**Team**

- **Tim Llewellynn** (Executive Director, CEO & Co-Founder)
- **Matteo Sorci** (Chief Scientific Officer & Co-Founder)
- **Colin Mason** (Chief Operating Officer)
- **Bogdan Lazar** (Head of Products)
- **Takahiro Nakamura** (Sales Manager Japan)
- **Sandra Hooker** (Chief Financial Officer)

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Shareholder**

If you are interested in becoming a shareholder of NVISO please **register your interest in becoming a shareholder here** with our lead manager.

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