12 November 2025

dorsaVi Acquires Leading Process-In-Memory Neuromorphic IP for Next-Gen Robotics and Edge Platforms

Transformational Processing-in-Memory and adaptive interface technology positions DVL at the forefront of next-generation wearable and robotics intelligence.

Highlights

- **Exclusive and transformational neuromorphic portfolio secured** from Technion led by Prof. Shahar Kvatinsky, a global authority in Processing-in-Memory (PIM) and neuromorphic hardware.
- **Processing-in-Memory (PIM)** merges computation and memory into one intelligent substrate, bringing brain-like reflexes, learning, and calibration directly into hardware.
- **DVL's FDA-cleared biosensors evolve** into autonomous nodes that can sense, think, and act locally - transforming how motion, muscle, and safety data are interpreted.
- **Dual-layer neuromorphic design** combines "Reflex Engine" executing learning and inference in memory and "Adaptive Interface" ensures noise-resilience, self-calibrating signal capture and real-time actuation.
- **Foundation for distributed robotic nervous systems** spanning soft grippers, prosthetics, exosuits, and industrial safety - enabling reflexive, adaptive behaviour without cloud dependence.
- **Market opportunity accelerating** as the global neuromorphic-computing market is forecast to grow from ~US$5.3Bn in 2023 to over US$20Bn by 2030[1], highlighting rising demand for on-device intelligence.
- **Strategic leap** shifts DVL from reactive analytics to self-adapting edge systems – the next generation of embedded AI for biosensors and robotics

Melbourne, Australia, 12 November — dorsaVi Limited (ASX: DVL) ("dorsaVi" or "the Company"), a leader in FDA-approved wearable sensor technologies and motion intelligence, is pleased to announce the acquisition of breakthrough neuromorphic enabling technology portfolio that elevates DVL's biomedical and robotics reflex platforms into a new era of adaptive, next generation intelligence.

The acquisition of the Neuromorphic enabling portfolio is pioneered by Prof. Shahar Kvatinsky, one of the world's leading PIM and neuromorphic-hardware researchers. Prof. Kvatinsky is a Professor of Electrical & Computer Engineering at Technion, heads the ASIC² Lab and the Architectures and Circuits Research Centre (ACRC), and previously worked in circuit design at Intel with a post-doctoral fellowship at Stanford. His team's work focuses on performing computation inside memory arrays, eliminating latency and energy bottlenecks inherent to traditional CPU-to-memory architectures.

[1] https://www.ibm.com/think/topics/neuromorphic-computing

Understanding Neuromorphic Computing

The human brain is the ultimate model of efficiency, capable of performing trillions of parallel operations using just ~20 watts of power[2]. It doesn't process information in a single pipeline like a traditional computer instead, neurons store and process data simultaneously, firing only when meaningful events occur. This architecture allows the brain to think, adapt, and react instantly without waiting for instructions or wasting energy.

In contrast, conventional computing architectures such as CPUs and GPUs are still based on the von Neumann model, where memory and processing are physically separated. Every task requires constant data shuttling between the two, creating latency and consuming enormous amounts of energy. Modern CPUs and GPUs can deliver high performance typically falling between 35 – 125 watts of power[3], but to emulate brain like, massively parallel workload they would require aggregation across thousands, and potentially far more, such processes resulting in a much higher overall power budget than a single chip.

CPUs are fast but serial, handling logic step-by-step. GPUs accelerate parallel workloads but still depend on external memory. The result is powerful computation that is also extremely energy-intensive and inefficient, especially at the edge, where every millisecond and milliwatt matters.

Neuromorphic and Processing-in-Memory (PIM) architectures break this barrier by bringing memory and compute together, performing calculations inside the same physical fabric where data is stored. Like neurons, each element can "sense, remember, and act" in one place. This allows systems to perform event-driven, massively parallel computation with minimal energy overhead, enabling real-time learning, adaptive control, and reflex-speed responses directly in hardware.

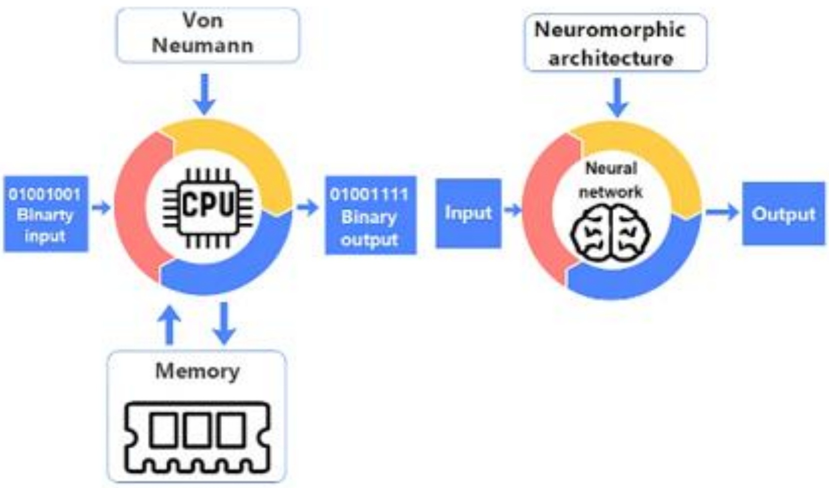

Figure 1: Illustration of traditional Von Neumann architecture vs. neuromorphic architecture

In essence, if CPUs represent the "brain's logic," and GPUs represent its "parallel cortex," then neuromorphic PIM represents its synapses and reflex pathways – essentially a living hardware nervous system capable of learning, adapting, and making decisions on its own. This remarkable

[2] Brain power - PMC
[3] Power Consumption Insights for Modern CPU Performance | MoldStud

technology transitions data-driven AI to hardware-native intelligence in computing that doesn't just process data but thinks where it lives.

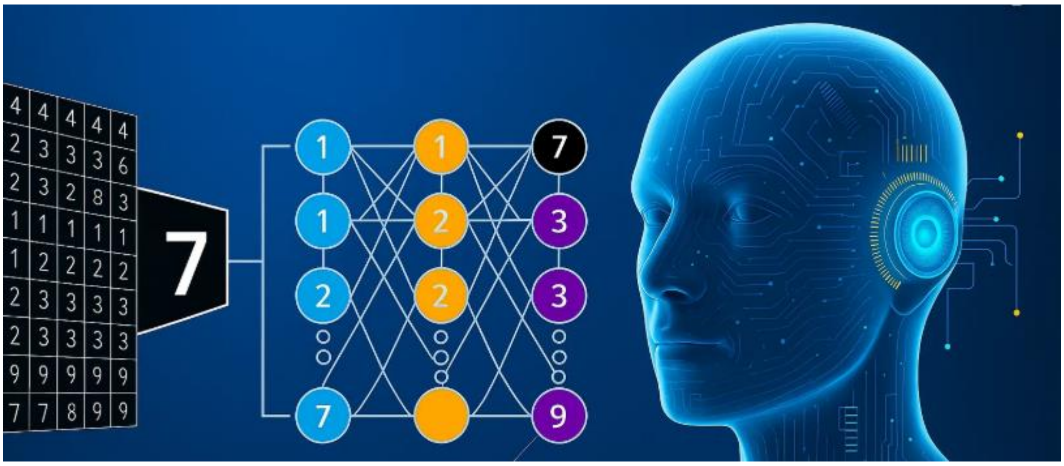

Figure 2: Illustration of neuromorphic PIM—an input grid feeds a compact neural network embedded in memory, collapsing data movement and delivering sub-microsecond, nanojoule-class inference

Overview of the Neuromorphic Technology

The Company's exclusively acquired portfolio of brain-inspired neuromorphic technology is designed to bring adaptive intelligence directly onto the device. Within this framework, several inventions apply Processing-in-Memory (PIM), an approach that brings memory and compute closer together to reduce data movement and power.

The portfolio combines and is structured as:

- **Group 1 — Neuromorphic Processing-in-Memory ("Reflex Engine")**: in-memory inference, on-device calibration and learning.

- **Group 2 — Adaptive Interface Layer ("Sensory Nerve Endings")**: noise-robust analog-to-digital converters (ADCs), reconfigurable digital-to-analog converters (DACs) and self-calibrating converters for real-time signal conditioning.

Collectively, the inventions are designed to integrate with the Company's FDA-cleared biomedical Sensor and Robotics Reflex platforms to support faster control loops, improved power efficiency and scalable deployment across regulated environments and industrial use cases.

In depth Look into the Neuromorphic technology

At the core of the portfolio's neuromorphic capability is the **Reflex Engine**, the group of inventions that provides the primary on-device compute and learning foundation. Whereas the **Adaptive Interface Layer** focuses on conditioning sensor inputs and driving actuators.

The Reflex Engine executes inference and adaptation within or adjacent to memory arrays (Processing-in-Memory), limiting data movement and associated latency/power overheads. Key elements include resistive memories such as Magnetic Tunnel Junction (MTJs)-based hardware synapses - tiny magnetic switches that remember their state without power - for efficient binary or ternary neural inference, delta-sigma neuron schemes that enable finer-grained training of memristive synapses for on-device calibration, and in-memory multiply-accumulate (IM-MAC) circuits that implement reflex-speed control near the data source.

This architecture is intended to support event-driven processing, millisecond-class response and adaptive thresholds supporting tighter closed-loop behaviour and improved energy efficiency on dorsaVi's FDA-cleared biosensor and robotic platforms.

Complementing the Reflex Engine, the Adaptive Interface Layer comprises smart data converters that condition signals at the point of capture and actuation. Noise-resilient ADCs with embedded feature extraction, pre-process biosignals and inertial data in real time, while self-calibrating converters adjust thresholds to changing users and environments to help maintain accuracy over device life. On the output side, reconfigurable DACs provide context-aware drive profiles for haptics, motors or prosthetic actuators.

By performing these functions locally, the interface is intended to reduce raw data movement, lower power, and support sensor fusion and privacy-preserving operation. For dorsaVi's FDA-cleared biosensor and robotics platforms, this layer helps deliver clean, actionable signals into the Reflex Engine and stable, tunable outputs back to the wearer or robot - supporting robust performance in clinical and industrial settings.

Figure 3: Visualising the bridge between brain and machine — where neural activity and silicon computation converge, enabling hardware that learns, adapts, and reacts with biological speed and precision.

Unlocking Next Generation Neuromorphic performance

Building on DVL's existing RRAM-enabled biosensing and reflex platforms, the acquired neuromorphic portfolio is intended to enhance on-device intelligence in three ways:

1) Deeper intelligence at the sensor (Interface Layer)

- Cleaner inputs, less power: Noise-resilient, self-calibrating ADCs can pre-extract features from motion and biosignals, reducing raw data movement and helping extend wear time.
- Personalised signals: Adaptive thresholds are designed to tune to individual gait, muscle activity, and environmental drift over device life.

2) Faster, more efficient control loops (Reflex Engine / PIM)

- In-memory inference: Processing-in-Memory aligned with DVL's RRAM foundation runs multiply-accumulate (MAC) operations in or beside memory arrays, so data doesn't travel to a separate processor, which is intended to lower latency and energy.
- On-device adaptation: Memristive training schemes (e.g., delta-sigma neuron methods) are designed to enable incremental updates on-device—supporting recalibration without persistent cloud connectivity.

3) Application outcomes

- Biosense & rehabilitation: On-device anomaly detection and cueing for gait range of motion may deliver more responsive, personalised feedback during everyday use while preserving privacy.
- Industrial ergonomics & safety: Event-driven classifiers are designed to issue reflex-grade alerts for hazardous motions with improved robustness to noise and task variation.
- Prosthetics & robotics: Spiking-based controllers that fuse inertial measurement unit (IMU) and electromyography (EMG) muscle activation "events" aim to provide smoother, low-power torque updates and self-tuning grip/assist profiles as conditions change.

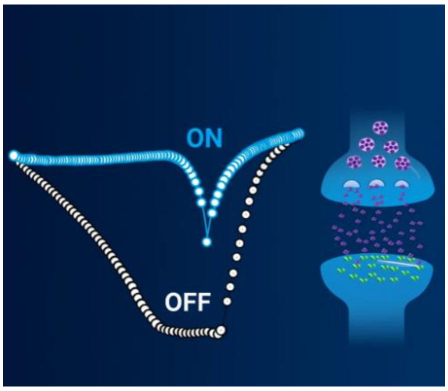

Figure 4: Illustration showing how neuromorphic circuits mimic biological synapses by switching between on/off states and adapting signal strength, forming the physical basis for learning and memory in hardware.

Why this matters for DVL

The combination of neuromorphic processing-in-memory and adaptive interface converters positions DVL to participate in generative computing at the edge where devices may not only detect events but also synthesise useful outputs and behaviours. With self-calibrating, feature-extracting ADCs feeding low-latency, in/near-memory inference, the architecture is intended to generate personalised control trajectories, haptic cues, and structured summaries from local signals, while heavier language or vision generation (where required) can run off-device (or intermittently) to preserve power, privacy, and reliability.

In biosensing, this enables wearables that generate real time personalised therapy prompts, adaptive haptic patterns, and clinician-ready progress notes from local events without streaming raw data. Devices could also generate synthetic biosignal variants on-device to improve robustness (e.g., simulating gait or tremor patterns under different conditions) and propose candidate parameter updates that a clinician can accept or override.

In prosthetics, exosuits, and robotics, neuromorphic controllers can generate intent-aligned motion profiles, for example, shaping grip force or assist curves as context changes while the interface layer drives actuators with context-aware DAC outputs. Paired with off-device foundation models, systems may further generate task policies and "what-if" scenarios to safely explore new skills, support fleet-level improvement via lightweight weight updates, and produce operator guidance or training content on demand.

Market Opportunity

Taken together, the portfolio opens pathways from today's reactive analytics to creative, self-adapting edge systems across a range of applications. This is directly relevant to wearables and robotics where latency, size and power budgets are constrained. Industry analysts forecast strong category growth with the global neuromorphic computing market projected to expand from ~US$5.3 billion in 2023 to ~US$20.3 billion by 2030[4], with other forecasts indicating ~US$47.3 billion by 2034. These trends support the Company's view that neuromorphic solutions represent a next generation of embedded AI, capable of delivering adaptive control and on-device learning in regulated biomedical and industrial environments.

Key Terms of the Transaction

Licence: Exclusive, worldwide, for several inventions relating to an embedding neuromorphic processing-in-memory technology

Consideration Shares: an aggregate of 80,000,000 fully paid ordinary shares in the Company issued to Technion Research & Development Foundation Ltd & Neurofabrica Pty Ltd (or their nominees) subject to shareholder approval

Reimbursement Payments: the following cash payments to the Vendors to reimburse them for previously incurred spend relating to the Licenses:

I. US$41,250 upon signing;
II. US$110,000 on the date which is 12 months after signing the Binding Agreement; and
III. US$123,750 on the date which is 24 months after signing the Binding Agreement.

Chairman Transition

The Company advises that Mr. Gernot Abl will transition from the role of Non-Executive Chairman to Executive Chairman, effective immediately.

[4] https://www.ibm.com/think/topics/neuromorphic-computing

This change reflects the Board's view that Mr. Abl's increased involvement is appropriate as the Company advances its strategic initiatives.

Mr. Abl brings significant experience in early-stage technology companies, capital markets, and business development, and has been actively engaged with the Company to date. His appointment as Executive Chairman will not only ensure continuity of leadership but also enable a more direct contribution to the execution of the Company's strategy.

Mr Abl's remuneration and incentives are included in Annexure A of this announcement.

This release has been authorised for lodgement to the ASX by the Board.

\- ENDS -

For further information about dorsaVi, please contact:

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About dorsaVi

dorsaVi Ltd (ASX: DVL) is an ASX company focused on developing innovative motion analysis device technologies for use in clinical applications, elite sports, and occupational health and safety. dorsaVi believes its wearable sensor technology enables, for the first time, many aspects of detailed human movement and position to be accurately captured, quantified, and assessed outside a biomechanics lab, in both real-time and real situations for up to 24 hours. dorsaVi's focus is on two major markets:

- **Workplace:** dorsaVi enables employers to assess risk of injury for employees as well as test the effectiveness of proposed changes to OHS workplace design, equipment or methods based on objective evidence. dorsaVi works either directly with major corporations, or through an insurance company's customer base with the aim of reducing workplace compensation and claims. dorsaVi has been used by major corporations including London Underground, Vinci Construction, Crown Resorts, Caterpillar (US), Boeing, Monash Health, Coles, Woolworths, Toll, Toyota, Orora, Mineral Resources and BHP Billiton.

- **Clinical:** dorsaVi is transforming the management of patients with its clinical solutions (ViMove+) which provide objective assessment, monitoring outside the clinic and immediate biofeedback. The clinical market is broken down into physical therapy (physiotherapists), hospital in the home and elite sports. Hospital in the home refers to the remote management of patients by clinicians outside of physical therapy (i.e. for orthopaedic conditions). Elite sports refer to the management and optimisation of athletes through objective evidence for decisions on return to play, measurement of biomechanics and immediate biofeedback to enable peak performance.

Further information is available at www.dorsaVi.com

Appendix A - Material Terms of Mr Gernot Abl's Employment Agreement

Item	Description
Commencement Date	Immediate
Term	No fixed term
Base Remuneration	$180,000 pa exclusive of statutory superannuation
Incentives	The following Performance Rights will be issued to Gernot Abl or his Nominee for nil cash consideration as follows: Tranche 1 - 4,000,000 Performance Rights with a vesting condition of the Company achieving a $0.10 VWAP of Shares over the previous 15 trading days within 24 months of the issue date. Tranche 2 - 4,000,000 Performance Rights with a vesting condition of the Company achieving a $0.15 VWAP of Shares over the previous 15 trading days within 30 months of the issue date. Tranche 3 - 4,000,000 Performance Rights with a vesting condition of the Company achieving a $0.20 VWAP of Shares over the previous 15 trading days within 36 months of the issue date. The issue of the Performance Rights will be subject to Shareholder approval at the Company's next General Meeting of Shareholders. All unvested performance rights will be lapse upon cessation of employment.
Termination	Either party may terminate the employment by giving 3 months' written notice.