

Zen Koh Joins Multi-Industry Leaders at Pittsburgh Robotics & AI Discovery Day to Advance Collaborative Robotics

Robotimize Strategic Advisor participates in Pittsburgh roundtable advancing collaborative robotics standards and human-centered deployment.

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EINPresswire.com/ -- Roundtable spotlights human-centred safety, interoperability, and evidence-led deployment across healthcare and industry. Zen Koh, Strategic Advisor at [Robotimize](#) Group, participated in the Collaborative Robotics Leadership Roundtable at Robotics & AI Discovery Day 2025, held at the David L.

Lawrence Convention Center in Pittsburgh, Pennsylvania. The open community event, organized within Pittsburgh's thriving robotics ecosystem—home to 125+ robotics and AI companies generating 7,300+ jobs across 18 verticals according to Pittsburgh Robotics Network—convened

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Collaborative robotics only scales when we design for human safety first, insist on interoperable systems, and prove value with real-world, evidence-led outcomes.”

*Zen Koh, Strategic Advisor,
Robotimize Group.*

industry leaders to advance collaborative robotics deployment across healthcare, manufacturing, defense, logistics, and beyond.

Pittsburgh's designation as the "Robotics Capital of the World" reflects decades of research excellence and commercial innovation that positioned the region as a global hub for autonomous systems development. The Collaborative Robotics Leadership Roundtable brought together experts from diverse industries to address shared challenges: designing human-robot systems that prioritize

safety without compromising capability, establishing interoperability standards that prevent vendor lock-in, ensuring AI-enabled perception systems deliver trustworthy performance, and



Zen Koh, Strategic Advisor at Robotimize Group, at Robotics & AI Discovery Day 2025 in Pittsburgh, participating in Collaborative Robotics Leadership Roundtable discussions.

preparing workforces to collaborate effectively with robotic teammates.

These themes resonate deeply with Robotimize's rehabilitation technology development philosophy. Collaborative robotics—systems designed to work alongside humans rather than replace them—represents a fundamental principle underlying VivantePlexus™ platform technologies and ACE™ partnership selections. Whether rehabilitation robots assisting therapists in clinical settings or autonomous mobile robots supporting hospital logistics, effective deployment requires human-centered design, measurable outcomes, and responsible governance.

Pittsburgh's Robotics Ecosystem: Multi-Industry Innovation Hub

Pittsburgh Robotics Network's ecosystem statistics reveal remarkable industry diversity spanning healthcare and medical robotics, manufacturing automation, autonomous vehicles, defense and security applications, logistics and warehouse automation, agriculture, construction, energy, space exploration, consumer robotics, education, and numerous other verticals demonstrating robotics' expanding applications.

This multi-industry concentration creates unique advantages. Companies developing autonomous navigation for warehouses share insights with those building hospital delivery robots. Manufacturing automation experts collaborate with surgical robotics teams on precision control algorithms. Cross-pollination accelerates innovation while revealing common challenges that collaborative solutions can address.

The Collaborative Robotics Leadership Roundtable leveraged this ecosystem diversity, bringing together perspectives from industries at different maturity stages in human-robot collaboration adoption. Healthcare robotics confronts regulatory pathways and patient safety imperatives.



Robotics & AI Discovery Day 2025 at David L. Lawrence Convention Center, Pittsburgh—convening 125+ companies and industry leaders across 18 verticals to advance collaborative robotics innovation.



(Fourth from left) Zen Koh with collaborative leaders at Pittsburgh Robotics & AI Discovery Day, discussing AI trustworthiness, interoperability standards, and evidence-led deployment strategies

Manufacturing automation balances productivity gains against workforce concerns. Logistics faces interoperability challenges across facilities. Each sector's lessons inform others confronting similar challenges in different contexts.

"Pittsburgh's robotics ecosystem demonstrates how regional innovation clusters accelerate technology advancement through cross-sector dialogue and shared infrastructure. The Leadership Roundtable exemplified collaborative problem-solving—addressing challenges no single company or industry can solve alone but that affect everyone deploying robots alongside human workers," said Zen Koh, Strategic Advisor, Robotimize Group.

Safety & Compliance Beyond the Baseline

Regulatory compliance establishes minimum safety thresholds, but market success requires designing significantly beyond baseline requirements. Industries deploying collaborative robots increasingly recognize that auditable safety, reliability, and usability function as competitive differentiators rather than mere compliance checkboxes.

Healthcare robotics particularly exemplifies this principle. Regulatory clearances certify that devices meet safety and effectiveness standards—essential prerequisites but insufficient for clinical adoption. Healthcare providers evaluate rehabilitation robots based on patient safety records, clinical effectiveness data, workflow integration, therapist confidence, total cost-of-ownership, and vendor support providing reliable maintenance and training.

Robotimize's development processes reflect this "design past the baseline" philosophy. VivantePlexus™ technologies undergo extensive clinical validation beyond regulatory requirements—pilot studies measuring patient outcomes, usability testing with diverse therapist



VivantePlexus™

Advocating for more pathways to comprehensive rehabilitation.



VivantePlexus™ integrated rehabilitation ecosystem—demonstrating collaborative robotics principles through modular technologies designed for therapist-robot teamwork in clinical settings.



Alliance for Collaborative Excellence (ACE™)

A global network of partners bridging technology, research, and clinical care.



ACE™ partnerships bring specialized collaborative robotics from global innovators—expanding comprehensive care options through evidence-based, interoperable technology collaborations.

populations, long-term reliability assessments, and iterative refinements addressing implementation feedback.

Manufacturing and logistics sectors face similar dynamics. Industrial cobots meeting safety standards still fail commercially if difficult to program, unreliable in production, or incompatible with existing equipment. Roundtable discussions emphasized that safety encompasses predictable behavior that human teammates understand, failure modes that degrade gracefully, cybersecurity protecting against malicious interference, and transparent operation enabling operators to build appropriate trust.

"Standards establish floors, not ceilings. Companies competing on safety, reliability, and usability as value propositions—rather than treating them as compliance burdens—ultimately serve customers better and build more sustainable businesses," said Kerry Guo, Founder and CEO, Robotimize Group.

Interoperability First: Breaking Down Vendor Silos

Strong consensus emerged around interoperability as a critical enabler for collaborative robotics scaling. Proprietary systems that lock customers into single-vendor ecosystems slow adoption, limit flexibility, and increase total ownership costs.

Autonomous mobile robots (AMRs) in hospital and warehouse settings illustrate interoperability challenges. Facilities often deploy AMRs from multiple vendors for different tasks—delivery, disinfection, logistics. Without common communication protocols and charging infrastructure standards, each robot type requires separate management systems, training programs, and maintenance contracts—complexity that undermines automation benefits.

Manufacturing automation confronts similar fragmentation. Factory floors integrate robots, conveyors, sensors, and enterprise software from numerous vendors. Interoperability enables flexible reconfiguration, prevents costly equipment obsolescence, and facilitates incremental automation adoption.

Rehabilitation technology benefits from interoperability thinking. VivantePlexus™ platform architecture prioritizes modular, interoperable design—unified data systems enabling different rehabilitation technologies to share patient progress information, common interfaces allowing therapists to manage multiple devices through consistent workflows, and open APIs facilitating integration with electronic health records.

ACE™ partnerships extend this interoperability philosophy beyond Robotimize's proprietary platforms. Rather than forcing healthcare providers to choose between VivantePlexus™ systems and specialized technologies from other developers, ACE™ enables complementary systems to coexist—exoskeletons from RoboCT alongside Robotimize's FES systems, virtual reality

environments from TTMT integrated with motor rehabilitation protocols, haptic gloves from WEART complementing hand therapy devices.

"Interoperability isn't altruism—it's pragmatic business strategy. Healthcare providers evaluating rehabilitation technologies favor vendors who enable rather than prevent integration with existing systems and future innovations," said Even Koh, Group General Manager, Robotimize Group.

AI You Can Trust: Safe Perception and Robust Decision-Making

Artificial intelligence enables sophisticated robot capabilities—recognizing objects, understanding environments, predicting outcomes, adapting to variations—but also introduces challenges around reliability, explainability, and safety that roundtable leaders grappled with extensively.

"Safe perception" emerged as a priority concern. Computer vision systems enabling robots to identify people, recognize objects, and navigate environments perform remarkably well in controlled conditions but can fail unpredictably when encountering unusual lighting, unfamiliar objects, or edge cases absent from training data.

Addressing these challenges requires extensive testing across diverse real-world conditions, transparent performance disclosure including failure modes, human oversight mechanisms enabling intervention when AI confidence decreases, continuous monitoring detecting performance degradation, and incident reporting systems enabling field learning.

Robotimize applies these principles to AI components within rehabilitation systems. Motion analysis algorithms classifying patient movement patterns undergo validation across diverse patient populations, body types, and clinical conditions. Therapists receive training on algorithm limitations and maintain authority to override automated recommendations when clinical judgment differs.

Cybersecurity featured prominently in trustworthy AI discussions. Connected robots collecting data, receiving commands, and coordinating with other systems present attack surfaces that malicious actors could exploit. Robust cybersecurity—secured communications, authenticated commands, data encryption, regular security audits—represents an essential component of safe AI deployment.

Data integrity and governance also emerged as critical themes. AI systems trained on biased, incomplete, or contaminated data perpetuate flaws into automated decisions. Responsible AI deployment requires careful data curation, diverse training sets, ongoing bias monitoring, and transparent documentation of data sources and limitations.

"AI trustworthiness isn't binary—it's context-dependent and requires ongoing vigilance.

Companies deploying AI-enabled robots must invest in continuous monitoring, field learning, and transparent communication about capabilities and limitations," said Professor Denny Oetomo, Co-Founder and designated CTO, Robotimize Group.

Workforce Readiness: Human-Robot Teaming and Training Infrastructure

Successful collaborative robotics deployment depends not just on technology capabilities but also on workforce preparation. Roundtable leaders emphasized that human workers must understand robot capabilities and limitations, develop appropriate trust calibrated to actual system reliability, and acquire skills to supervise, troubleshoot, and collaborate with robotic teammates.

Healthcare rehabilitation exemplifies these workforce readiness challenges. Therapists trained in manual techniques must develop new competencies when working alongside robotic systems: understanding biomechanical principles underlying device operation, interpreting objective performance data to guide treatment decisions, troubleshooting common technical issues, and integrating robotic assistance within holistic treatment plans.

Robotimize addresses these requirements through comprehensive training programs: hands-on workshops providing therapists direct experience with VivantePlexus™ technologies, clinical education explaining evidence base and appropriate applications, ongoing support enabling questions and problem-solving, and user communities facilitating peer learning and best practice sharing.

Manufacturing and logistics face similar workforce development needs. Operators must learn to program, monitor, and collaborate with cobots. Maintenance technicians require new diagnostic skills. Supervisors need frameworks for evaluating human-robot team productivity. Roundtable discussions explored accreditation and certification pathways that could standardize collaborative robotics competencies across industries. Formalized training programs would benefit workers seeking portable skills, employers evaluating candidate qualifications, and technology vendors ensuring proper system utilization.

The psychological dimension of human-robot teaming also received attention. Workers must develop appropriate trust—neither over-trusting systems beyond their reliable capabilities nor under-trusting to the point of avoiding beneficial collaboration.

"Collaborative robotics succeeds when human workers feel empowered rather than threatened, when training investments match technology investments, and when organizations recognize that automation augments rather than replaces skilled workers," said Even Koh, Group General Manager, Robotimize Group.

Healthcare Applications: Rehabilitation Robotics and Hospital-to-Home Pathways

Healthcare rehabilitation represents a mature application domain for collaborative robotics principles—decades of research and clinical deployment provide evidence for effectiveness, safety considerations, and implementation best practices that inform other industries.

Rehabilitation robots function as therapist assistants, providing consistent physical assistance during exercises, delivering precise electrical stimulation synchronized with patient movements, generating objective performance data tracking recovery progress, and enabling therapy intensities exceeding what therapists can manually provide.

VivantePlexus™ technologies demonstrate various human-robot collaboration modes: HandVivante™ MirrorHand assists patients' voluntary hand movements while therapists guide exercise selection, GaitVivante™ ProMax provides body weight support during walking practice while therapists monitor gait quality, and RevitaVivante™ delivers functional electrical stimulation during cycling while therapists adjust parameters.

Hospital-to-home care pathways particularly benefit from collaborative robotics. Patients transitioning from intensive inpatient rehabilitation to community settings need continued therapy support without daily facility visits. Home-based rehabilitation robots supervised remotely by therapists enable this continuity—maintaining therapy intensity, tracking objective progress, identifying concerning trends, and providing patient reassurance through maintained clinical connection.

This care model addresses multiple healthcare system challenges: reducing readmission risks, improving patient satisfaction through convenient home-based therapy, increasing therapist productivity, and demonstrating measurable outcomes justifying reimbursement for remote services.

"Healthcare serves as a testbed for collaborative robotics principles because the stakes—patient safety, clinical effectiveness, therapist acceptance—demand rigorous validation and thoughtful implementation. Other industries benefit from healthcare's hard-won lessons," said Zen Koh, Strategic Advisor, Robotimize Group.

Measurable Outcomes and Total Cost-of-Ownership

Roundtable leaders emphasized that collaborative robotics adoption ultimately depends on demonstrable return on investment—measurable productivity improvements, quality gains, safety enhancements, or cost reductions justifying automation investments.

ACE™ partnerships enable Robotimize to offer comprehensive solutions while managing TCO complexity. Rather than developing every therapeutic technology internally, strategic

partnerships with specialized developers provide healthcare providers access to best-in-class systems across multiple rehabilitation domains.

"Collaborative robotics moves beyond technology fascination to sustainable business reality when deployments demonstrate clear value propositions. Evidence-based adoption—measuring outcomes, calculating TCO honestly, comparing alternatives fairly—protects against both over-hyped expectations and excessive conservatism," said Kerry Guo, Founder and CEO, Robotimize Group.

Pittsburgh Roundtable: Collaborative Problem-Solving for Industry-Wide Challenges

The Collaborative Robotics Leadership Roundtable exemplified how regional innovation ecosystems facilitate progress on challenges no single company can solve independently. Interoperability standards require multi-vendor coordination. Workforce training infrastructure needs industry association and educational institution collaboration. Safety best practices benefit from transparent incident sharing. Regulatory frameworks respond to collective industry input more effectively than individual company lobbying.

Pittsburgh's robotics cluster—125+ companies spanning 18 verticals generating 7,300+ jobs according to Pittsburgh Robotics Network—creates critical mass enabling these collaborative initiatives. Companies compete fiercely for customers and talent but recognize shared interests in growing the overall market, developing skilled workforce pipelines, establishing favorable regulatory environments, and advancing fundamental technologies.

Robotimize's participation in forums like the Pittsburgh roundtable reflects commitment to contributing to collaborative robotics field advancement, not just proprietary technology development. The company's leadership involvement in academic publishing through JRMT Managing Editor roles, participation in industry conferences, and partnership models prioritizing ecosystem health all demonstrate this broader perspective.

"Collaborative robotics—both the technology category and the industry approach to advancing it—succeeds through cooperation alongside competition. Pittsburgh's ecosystem demonstrates this balance effectively," concluded Zen Koh.

As collaborative robotics continues expanding across healthcare, manufacturing, logistics, defense, and numerous other sectors, convenings like the Pittsburgh Robotics & AI Discovery Day Leadership Roundtable provide essential forums for addressing shared challenges, establishing common standards, preparing workforces, and ensuring that human-robot collaboration delivers on its promise to augment human capabilities safely, effectively, and equitably.

About Robotics & AI Discovery Day 2025

Robotics & AI Discovery Day is an open community event showcasing Pittsburgh's leadership in robotics and artificial intelligence innovation. The 2025 Collaborative Robotics Leadership Roundtable convened industry leaders from healthcare, manufacturing, defense, logistics, and other sectors to address shared challenges in human-robot collaboration, safety standards, interoperability, workforce readiness, and responsible AI deployment.

About Pittsburgh Robotics Network

Pittsburgh Robotics Network serves as the central hub for the Pittsburgh region's robotics and AI ecosystem, supporting 125+ companies and 7,300+ jobs across 18 industry verticals. The network facilitates collaboration among companies, research institutions, educational organizations, and government agencies to advance robotics innovation and position Pittsburgh as a global leader in autonomous systems development.

About Robotimize Group

Robotimize Group is a next-generation health technology company headquartered in Singapore, specialising in intelligent rehabilitation robotics and digital neurotechnologies. Through VivantePlexus™, its integrated rehabilitation ecosystem, and ACE™, its strategic partnerships portfolio, Robotimize delivers comprehensive solutions that support motor, cognitive, and neurological recovery across hospital, home, and community settings. With regional hubs in Malaysia and Europe and a growing international partner network, Robotimize is redefining rehabilitation delivery—making it more personal, adaptive, and accessible. For more information, visit: www.robotimize.tech

Jerry HONG
Robotimize Group
+60 11-1224 1674
[email us here](#)

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