

CognitIoT by Raniel Systems: Revolutionizing Industry 4.0 with Real-Time Edge Computing

Raniel Systems' CognitIoT revolutionizes Industry 4.0 with real-time edge computing, driving sustainability, security, and operational efficiency.

NEW YORK, NY, UNITED STATES, August 26, 2024 /EINPresswire.com/ -- Industry 4.0 emphasizes cyber-physical systems, IoT, cloud computing, and cognitive-edge computing. It has set the stage for unprecedented advancements in efficiency, productivity, and sustainability. An integration of these revolutionary technologies will certainly be the driver for industry 4.0.

By 2025, the number of connected devices in use is expected to exceed 56 billion units, according to IDC. IoT is already playing a pivotal role across enterprise, and it is going to get only more immersive.

Edge computing is not a successor to the cloud, but another expansion of technology's reach that represents an exceptional opportunity.

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Raniel Systems is committed to accelerate digital autonomy by leading the innovation in cognitive edge computing”

Prasenjit Bhadra

At the forefront of this revolution is [Raniel](#) Systems, a leading software-as-a-service (SaaS) company renowned for its cutting-edge Internet of Things (IoT) solutions. Led by CEO and founder Prasenjit Bhadra, Raniel Systems is pioneering the integration of cognitive AI and edge computing, fundamentally transforming how industries operate and thrive.



Synergy of AI and Renewable Energy

Ranial Systems has developed a patented cloud-independent cognitive IoT runtime platform known as [CognitIoT](#). This edge-native platform uniquely combines software and hardware to enhance real-time process automation, monitoring, control activities, and operational intelligence. CognitIoT stands out as a transformative force in the IoT landscape. It aims to drive enterprise efficiency reducing downtime, minimizing catastrophic failures, lowering the costs of scaling network and cloud infrastructure, and overcoming performance bottlenecks.

According to Prasenjit Bhadra, "Our team at Ranial has led major digital transformation programs and co-innovation initiatives in RFID, Enterprise Mobility, Sensors, and Actuators over the last two decades. Our goal is to elevate IoT systems from mere data collection engines to informed, real-time decision support systems."

How CognitIoT Drives Sustainability

Renewable energy is a crucial component in combating climate change. In 2019, industrial emissions accounted for almost a quarter (23%) of greenhouse gas emissions in the U.S. Ranial's platform aims to support energy-intensive industries in adopting cleaner options and improving overall efficiency.

Ranial Systems' CognitIoT platform has been rigorously tested and verified across multiple sectors, demonstrating its ability to enhance automation processes by 2-3 times and increase energy efficiency while reducing operational costs by 33-40%. These results showcase CognitIoT's potential to significantly optimize operations and deliver substantial cost savings.

Bhadra envisions a future where the platform will closely monitor weather conditions and provide timely alerts to prevent casualties during natural disasters. In the manufacturing sector, CognitIoT can regulate energy utilization, manage supply chains intelligently, and monitor productivity in real-time, detecting issues before they cause downtime and associated losses.

Ranial Systems is poised to address critical challenges emerging from climate change, sustainability, the mass adoption of electric vehicles, renewable energy, cybersecurity threats, and intelligent manufacturing.

With a strategic focus on green innovation and sustainability, Ranial's IoT platform is set to enhance the management of renewable energy plants. This would include distribution grid monitoring and other automated operations, ensuring the continuous production and delivery of clean energy. Ranial Systems has truly revolutionized the implementation of microgrid distribution and management on both meter fronts - the industrial and commercialized.

Advancing Protective Intelligence

Ranial's IoT solutions leverage edge nodes to replicate human thinking and conscious acts, prioritizing reasoning patterns over historical data. The cognitive models developed by Bhadra's

team are designed to understand predictive and prescriptive trends, develop context awareness, and adapt to ever-changing cyber-physical environments through unsupervised learning.

Bhadra explains, "The systematic process of gaining operational maturity and responsive automation can't be achieved through re-training models over time. We aim for a new paradigm based on real-time pattern recognition and anomaly detection within a context-aware 'protective intelligence.'"

This protective intelligence not only increases process efficiency but also enhances the security of critical infrastructures. By detecting and preventing cyberattacks in real-time without human intervention, Ranical's solutions offer a robust defense against potential threats.

For Bhadra, IoT cognitive systems like CognitIoT represent the future of process automation, breaking free from predetermined rules and limitations. With Ranical Systems leading the way, the possibilities for enhanced productivity, sustainability, and security in various industries are limitless.

About Ranical Systems

Ranical Systems is a leading developer and provider of innovative IoT solutions designed to transform production and energy industries. With a focus on digital autonomy, cognitive edge computing, and the world's largest distribution energy storage, Ranical Systems is revolutionizing the implementation of microgrids in industrial and commercial applications, driving 2-3x energy efficiency and reducing operational costs by 33-40%.

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