gradiant

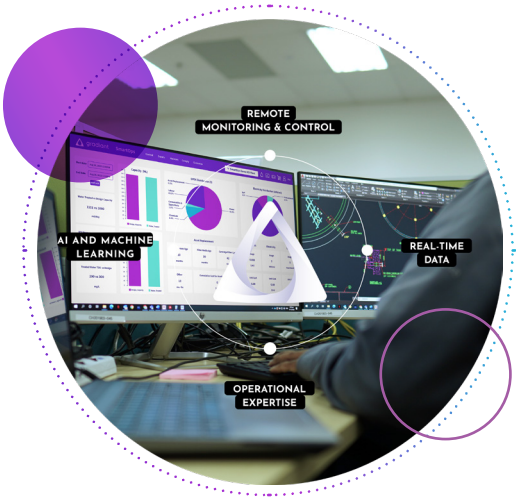
Technology Profile

SMARTOPS AI

Powered by TURING

Water treatment plants face numerous challenges when it comes to day to day operations and maintenance, including limited visibility and control, data overload, and analysis that may be siloed - leading to inefficiency and error.

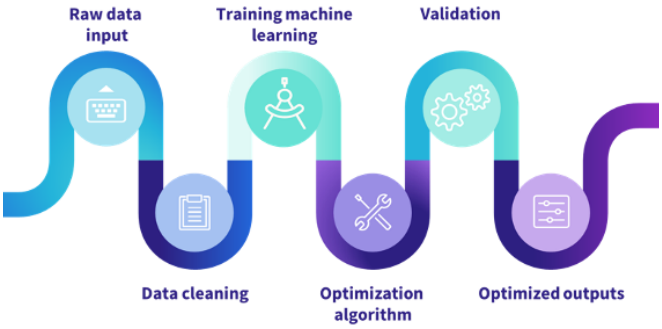
Enter SmartOps. One AI-Powered Platform. Infinite Insights.



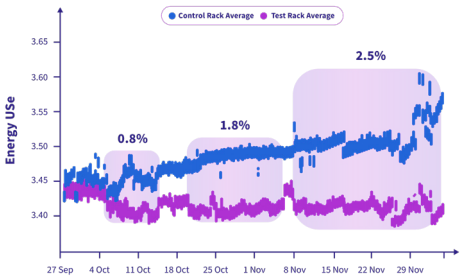
Overview of the Solution

At the heart of our digital ecosystem is SmartOps — an integrated end-to-end platform for plant performance optimization and asset management. A digital twin model of the facility is created, with sensors acting as the bridge between the physical plant and SmartOps. The sensors stream real-time data between the physical plant and its digital twin. The efficiency and productivity of the facility are improved by highlighting areas needing attention and proactively predicting the likelihood of future events — such as the need for cleaning or replacing membranes and equipment.

SUPERVISED MACHINE LEARNING



OPTIMIZING ENERGY CONSUMPTION



Energy Savings Up to 10%

Gradiant is leading the digitalization of water with SmartOps — a digital ecosystem for the Control, Predict, and Perform of water treatment facilities. We harness the power of digital to re-imagine how facilities are designed, built, and operated — based on our foundation of systems expertise learned from the delivery and operations of projects around the world. Our machine learning AI algorithms allow for the optimization and prediction of plant operations. We use historical and real-time process data to deliver immediate productivity improvements and cost savings, as well as reducing the carbon and water footprints in systems where our solutions are installed.

Key Benefits

REDUCED OPEX

When leveraging SmartOps AI's most advanced features, clients have experienced as much as an overall reduction of 20% across their annual operating expense budget.

STREAMLINED OPERATIONS

When leveraging the full power of AI and machine learning, clients can substantially streamline their processes, saving time, money, and potential for safety incidents.

SUSTAINABLE IMPACT

Reducing consumables like membranes or chemicals; improving energy efficiency through optimizing processes; and increasing productivity of water treatment systems by as much as 80%.

Core Capabilities that Set Gradiant Apart

INNOVATION

Award winning, patented technologies with industry leading performance.

AI AND MACHINE LEARNING

Machine learning AI algorithms deliver immediate cost and performance improvements.

PROJECT DELIVERY

A range of contract models that are adaptable to the unique situation and needs of our customers.

CURE CHEMICALS

Custom formulae, developed in-house to meet the high-performance specifications our technologies demand.

CONTROL

- Easily view plant conditions and anomalies
- Intuitive systems monitoring & control
- Rapid detection of performance deviations
- Real-time and historical process data on any device
- Performance data analysis and visualization

PREDICT

- Machine Learning algorithms forecast & adjust setpoints
- Predictive data-driven operations & maintenance
- Maintain KPIs based on time-series predictions
- Proactive maintenance using condition monitors
- Maximize overall equipment effectiveness

PERFORM

- AI-driven actions to optimize OPEX and system availability
- Extend service lives with smart preventive maintenance
- Minimize inventory and consumables with AI forecasting
- Optimize OPEX based on changing system conditions
- Achieve the lowest Total Water Cost

Gradiant's Innovation Culture

Our award-winning commercial innovation sets us apart in the industry. We rapidly translate innovations from bench scale to commercialization that support our mission to deliver water treatment solutions that meet the evolving needs of our customers. Our R&D advancements, whether equipment or chemical, are thoroughly validated in Gradiant's global laboratories and field-tested before deployment. Customized bench- and pilot-scale testing is used to demonstrate proof-of-concept and cost optimization — by the same teams that develop our leading-edge commercial technologies.

CONTACT US

Learn more about our technology at www.gradiant.com/technologies/smartops-ai/
Contact Gradiant today at gradiant.com/contact

LEARN MORE AT
WWW.GRADIANT.COM

Document No. 400- 002-01-EN
May 2024