brainiall

AI Autopilots, with real-time control & optimization for any type of business operations.
Brainiall delivers higher yields and efficiency when used in complex manufacturing processes. The Brainiall AI Autopilot automatically adapts to operational conditions to improve performance, directly delivering value to the bottom line.

Case Study: Brainiall AI Autopilot in a Grinding Process in a Gold Mining Plant

Brainiall's autopilot was used in a month-long trial to manage the grinding stage in a gold ore processing production line. The plant processes 3 million tons of gold ore annually, with USD 250 million in revenue. Directly measured results:

- Yield increase of +7.8%
- Energy used reduction of -8.1%
- Approximately 238 tons/year of CO2 Reduction

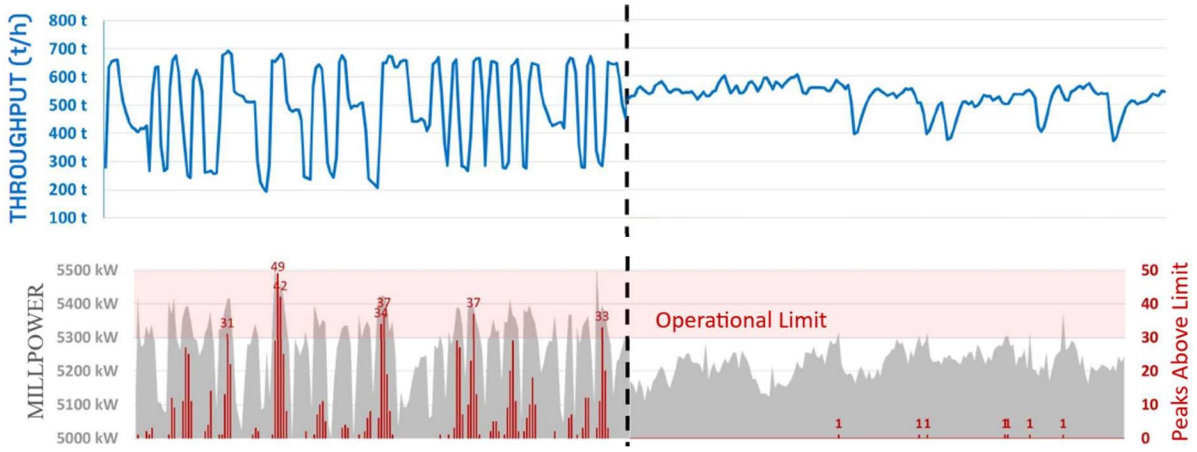
A secondary benefit of reduced maintenance is expected due to more consistent grinding equipment operation.

The Production Line

The gold ore grinding line managed by the autopilot consists of 40+ pieces of equipment, monitored by 120+ sensors and controlledby 20+ decisions translated into commands sent to the plant every second.

Operating results

The trial of the autopilot was for one month. Select results comparing traditional manual control with autopilot control:

Manual Control	Autopilot Control
• Technicians control equipment based on their assessment of the current ore, weather, and equipment status. • Technicians make decisions based on their experience. • Technicians work with limited visibility of the entire process.	• AI can "see" the entire line in the present and the past. • The autopilot uses this information to predict the future, controlling equipment to optimize throughput. • Technicians monitor the equipment operation, proactively looking for issues or when maintenance is needed.
Based on 636 hours (7.3% of the Year). Day On, Day Off Comparison 	
Unstable operation with several peaks outside machine specification increasing the frequency of maintenance pauses	Stable operation within machine specification, reducing energy consumption and the need for maintenance
Throughput: 490 tons per hour	Throughput: 528 tons per hour (+7.8%)
Energy Consumption: 10.45 kWh/ton	Energy Consumption: 9.67 kWh/ton (-8.1%)