PVOP

NEAR 100% AUTOMATIC AI-BASED FAULT DETECTION & DIAGNOSIS

FROM MISSED FAULTS TO PREDICTIVE PRECISION — AUTOMATE YOUR PV UPTIME

SHORT DESCRIPTION

This AI-based fault detection system transforms PV plant monitoring from a reactive guessing game into a precision-driven, fully automated process. Built on deep industry expertise and machine learning, it continuously scans real-time and historical data to detect, diagnose, and prioritize faults — with near 100% automation. From minor degradation trends to critical string failures, it classifies and clusters issues before they escalate, enabling data-driven interventions that reduce downtime, OPEX, and energy losses. Designed for both utility-scale and distributed PV portfolios, this system is the foundation for predictive maintenance and long-term asset performance.

EXPECTED IMPROVEMENTS

- Up to 90% reduction in unplanned outages through early-stage fault identification
- 20–30% reduction in O&M costs by minimizing unnecessary site visits and manual inspections
- Near real-time visibility into PV system health and loss events
- Detection accuracy improved with digital twin simulation and AI clustering
- Continuous model learning for higher diagnostic precision over time

MAIN BENEFITS

For Project Managers (PMs):

- **Gain full operational transparency across sites with zero manual data crunching**
- **Resolve technical issues faster through prioritized, automated alerts**
- **Simplify supervision and reporting with centralized fault logs**

For Financial Responsibles (FRs):

- **Preserve ROI by reducing energy yield losses caused by undetected faults**
- **Support investment models with verifiable uptime and performance data**
- **Avoid penalties and warranty risks linked to unreported system degradation**

For O&M Managers/Technicians:

- **Eliminate repetitive, manual monitoring tasks**
- **Receive actionable alerts, not overwhelming alarm floods**
- **Focus technician time on resolving verified, high-impact issues**

USE CASES

A **utility-scale operator** integrates the system to automatically detect underperformance in a newly installed inverter string. The AI isolates the root cause — a shading anomaly — and prevents a recurring 4% loss in daily yield.

An **O&M team** receives a severity-prioritized alert about a localized fault. Instead of a blanket inspection, they dispatch a technician to the specific affected module cluster, reducing diagnosis time by 80%.

A **portfolio manager** uses the platform's real-time analytics and historical pattern learning to benchmark underperformance across five PV plants, initiating predictive maintenance and avoiding €50k in potential downtime costs.

Book your personalized discovery call here

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