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Paper ID 311: *Power Curve as SLO: Continuous Underperformance Detection for Wind Turbines from SCADA Data*

Barnadeep Bhowmik is an Edge Infrastructure Architect at SLB and an IEEE Senior Member, with more than 15 years of experience helping organizations build platforms, improve reliability and simplify complex technology landscapes. A software engineer at heart, he has worked across software development, cloud infrastructure, DevOps, platform engineering, site reliability engineering (SRE) and architecture, supporting digital transformation initiatives for organizations including Coca-Cola, Tesco, Whole Foods, Hertz, Deutsche Bank and Pearson.

At SLB his work centers on Azure, Kubernetes, edge computing, platform engineering and cloud automation. He is a regular speaker and writer on SRE, the operational challenges of running complex production systems, and the adoption of AI in software delivery and operations. He is a co-inventor on a US patent for automated cloud-based validation of client customizations (US 12,079,109 B2) and has co-authored research on IACS security in OT environments. His research interest is the practical adoption of AI in the energy sector, where reliability and operational discipline matter most. His ICRERA 2026 paper applies SRE concepts such as SLOs, error budgets and burn rates to wind turbine performance monitoring.