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## Fortifying the Enterprise Core with AI Driven Anomaly Detection and Governance

Manoj Gudala

Global Lead IT Business Analyst, Commercial Advanced Analytics Kellanova Plano, Texas, USA

### Abstract

As multinational enterprises migrate critical operations to cloud-based architectures, the intersection of data governance and cybersecurity has become a primary operational risk. Traditional rule-based security measures often fail to detect sophisticated, low-frequency anomalies within complex Enterprise Resource Planning (ERP) and Business Intelligence (BI) ecosystems.

This presentation proposes a novel framework for AI-Augmented Enterprise Security, utilizing unsupervised machine learning techniques to enhance threat detection and data integrity. Drawing on research in anomaly detection algorithms and practical experience at Fortune 500 organizations, this session explores the application of Isolation Forests and Autoencoders to identify fraudulent transaction patterns and unauthorized data access in real-time.

The presentation demonstrates how integrating AI agents into standard BI workflows creates “self-healing” governance structures that proactively flag irregularities before they impact financial reporting or operational continuity. Additionally, the talk addresses the “governance gap” in IoT deployments, with a case study of sensor fusion protocols developed for the SecondPulse crash detection system—illustrating how secure edge data streams can be architected and monitored.

Attendees will gain actionable strategies for embedding AI-driven security layers into existing data infrastructures to ensure compliance and operational resilience.

### Key Topics Covered:

- Unsupervised machine learning for anomaly detection
- Real-time BI security integration
- IoT governance frameworks
- Enterprise compliance automation