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(57) Abstract :

The invention provides a cloud-based architecture for distributed big data analytics that integrates multiple modules, including Data Ingestion (101), Distributed Storage (102), Analytics Engine (103), Machine Learning (104), Orchestration (105), Security (106), and Visualization Interface (107). It enables scalable, fault-tolerant, and secure analytics by dynamically allocating resources, supporting real-time data pipelines, and integrating predictive intelligence. The architecture ensures interoperability across multi-cloud environments and provides actionable insights through advanced visualization, thereby addressing modern challenges in large-scale data analysis with efficiency and robustness.

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