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(71)**Name of Applicant :**
1)Chitkara University
Address of Applicant :Chitkara University, Chandigarh-Patiala National Highway, Village Jhansla, Rajpura, Punjab - 140401, India. Patiala ---------- ----------
2)Bluest Mettle Solutions Private Limited
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)MISHRA, Rahul
Address of Applicant :ODC-4, Panchshil Tech Park, inside Courtyard by Marriott premises, Hinjewadi Phase - 1, Pune - 411057, Maharashtra, India. Pune ---------- ----------
2)PANDEY, Sakshi
Address of Applicant :ODC-4, Panchshil Tech Park, inside Courtyard by Marriott premises, Hinjewadi Phase - 1, Pune - 411057, Maharashtra, India. Pune ---------- ----------
3)MANTRI, Archana
Address of Applicant :Chitkara University, Chandigarh-Patiala National Highway, Village Jhansla, Rajpura, Punjab - 140401, India. Patiala ---------- ----------

(57) Abstract :
The comprehensive system (100) designed for anomaly detection in work practice data consists of several key components. It integrates a diverse array of data sources (102) from different domains, encompassing computer systems, communication devices, and environmental sensors. A pre-processing module (104) meticulously prepares the data from these sources for integration into the subsequent data fusion engine. The data fusion engine (106) serves as the core of the system, employing a blend of statistical models, machine learning algorithms, and natural language processing to seamlessly integrate data from diverse sources and discern patterns that signify anomalous behavior. The system operates in two distinct modes—a real-time mode and a batch mode (110). The real-time mode triggers prompt alerts upon detecting anomalies, employing mediums such as emails, SMS messages, or pop-up notifications. The batch mode generates detailed reports that succinctly summarize anomalous behavior over specified time intervals. The system can be tailored to specific applications, such as cybersecurity, fraud detection, and quality control, making it a versatile solution catering to varied industry needs.

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