

Editorial

We now release the first issue of the fifteenth volume of the **Progress in Computing Applications** with the following papers.

In the opening paper, “**A Time-to-Failure Aligned Methodological Framework for Sensor Degradation Analysis and Remaining Useful Life Prediction in Industrial IoT Systems,**” the authors outlined a Time to Failure (TTF) aligned design for analyzing sensor degradation and predicting Remaining Useful Life (RUL) in Industrial Internet of Things (IIoT) systems. This design merges raw sensor data and reliable decision support, enabling proactive maintenance scheduling that minimizes unplanned downtime and optimizes operational safety in Industry 4.0 environments.

In the next paper, “**Unsupervised Semantic Analysis of Python FAQ Corpora: Topic Modeling, Similarity Detection, and Structural Optimization,**” the authors documented that unsupervised machine learning techniques can audit and optimize technical knowledge repositories through systematic semantic analysis of a curated Python FAQ corpus. The experimental results showed that five coherent thematic clusters correspond to core Python programming concepts: language fundamentals such as data structures, syntax, and control flow; function operations; and advanced mechanisms. The findings emphasise that rigorous, contextually justified preprocessing, combined with multi-perspective unsupervised analytics, enables researchers and practitioners to unlock significant value from complex text corpora.

In the last paper, “**Comparative Unsupervised Anomaly Detection in Mixed Code -Text Corpora Using Isolation Forest and PCA Autoencoders,**” the authors proposed a comparative unsupervised framework to identify irregularities within mixed code text corpora, specifically addressing the heterogeneity of technical data from developer forums. The findings showed the value of multi-perspective anomaly detection strategies for comprehensive coverage of irregular patterns. The systematic anomaly analysis supported dataset cleaning, model robustness evaluation, and improved preprocessing for downstream tasks.

We hope that these papers mark a technical advancement in computing applications.

Editors