AI-Driven ITSM Automation using NLP

AUTOMATING IT SUPPORT USING MACHINE LEARNING & KNOWLEDGE SYSTEMS

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Problem Statement

- Retail IT environments generate large volumes of support tickets
- Manual classification and resolution cause delays
- Knowledge reuse is limited and inconsistent

Project Objectives

- Automate ticket classification using NLP
- Register complaints with validation
- Provide intelligent KEDB-based solutions

Dataset Used

- tickets.xlsx – historical incidents
- Sites.xlsx – site master
- Inventory.xlsx – asset data
- KEDB & Solutions – knowledge base

Methodology

- Text preprocessing (TITLE + DESCRIPTION)
- TF-IDF vectorization
- Logistic Regression classification
- Cosine similarity for resolution

System Architecture

- User Input → NLP Processing
- ML Classification
- Complaint Registration
- KEDB Solution Recommendation

Complaint Registration Chatbot

- Accepts Site or Tag
- Validates site-tag mapping
- Auto-generates complaint ID
- Stores data in Complaints.xlsx

KEDB Knowledge Engine

- Predicts Issue Type from text
- Retrieves multiple solutions
- Reduces repetitive troubleshooting

Results

- Ticket classification accuracy ~74%
- Successful automation of complaint flow
- Multiple solution suggestions

Ethical & Responsible AI

- No personal data used
- Predictions are advisory
- Human override possible

Conclusion

- AI significantly improves ITSM efficiency
- Reduces resolution time
- Scalable for enterprise use

Future Scope

- Deep learning models (BERT)
- SLA breach prediction
- Web-based dashboard