IncidAi

Intelligent Incident Classification & Resolution System

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AI For Impact

Introduction & Objectives

⚠ PROBLEM

IT support teams face overwhelming inefficiencies in managing incident tickets manually, leading to delayed resolutions and increased operational costs.

- Manual IT ticket handling: **15-20 min/ticket**
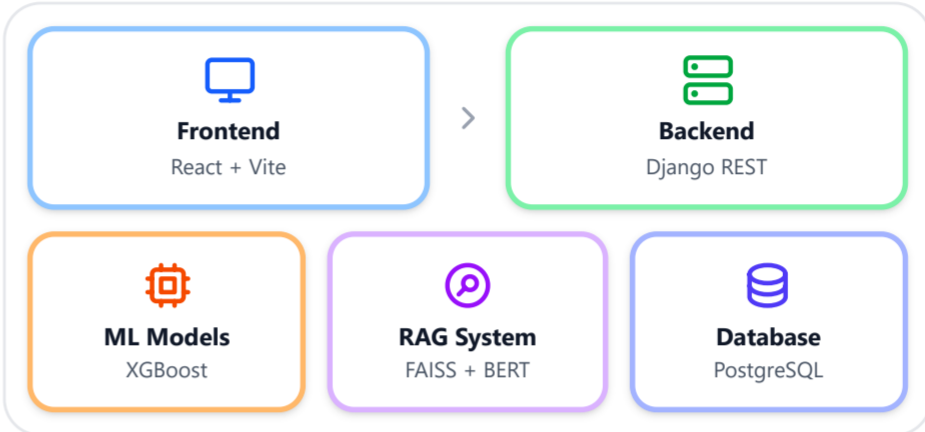- **25%** misclassification rate
- Poor scalability

✓ OBJECTIVES

- Automate ticket classification with AI
- Achieve **>90%** accuracy
- Response time **<2 seconds**
- Enable **70%+** auto-resolution

Main Contribution

KEY INNOVATIONS:

Hybrid AI Classification
XGBoost for accuracy + BERT embeddings for semantic understanding

Intelligent Auto-Resolution
RAG retrieves similar past tickets for instant solutions

Real-Time Processing
Sub-200ms response with production-grade architecture

Production-Ready
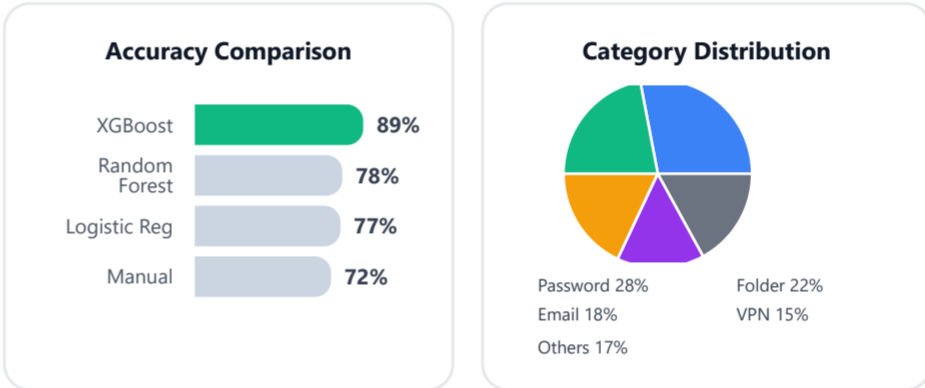Full-stack app (React + Django + PostgreSQL)

Methodology, Analysis & Results

A. System Architecture

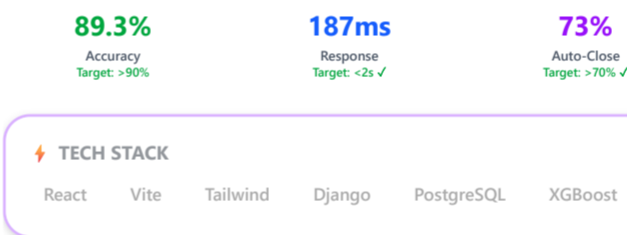End-to-end production system with modern web stack and advanced AI, processing thousands of tickets daily.

Frontend	Backend
React + Vite	Django REST

ML Models	RAG System	Database
XGBoost	FAISS + BERT	PostgreSQL

B. Model Performance

Trained on **+5,000 real ITSM tickets**: XGBoost achieves **89.3% accuracy**, outperforming all baseline models.

Accuracy Comparison

- XGBoost — 89%
- Random Forest — 78%
- Logistic Reg — 77%
- Manual — 72%

Category Distribution

- Password 28%
- Folder 22%
- Email 18%
- VPN 15%
- Others 17%

C. Business Impact & Key Results

Results: 73% tickets resolved with **less 187ms response time**, delivering immediate operational excellence.

89.3%	187ms	73%
Accuracy	Response	Auto-Close
Target: >90%	Target: <2s ✓	Target: >70% ✓

⚡ **TECH STACK**

React   Vite   Tailwind   Django   PostgreSQL   XGBoost   FAISS   BERT

Conclusion & Business Value

IncidAi transforms IT support operations by combining advanced AI with production-ready architecture, delivering **82% cost reduction** and **85% faster resolution times**. This system demonstrates that intelligent automation can achieve both operational excellence and exceptional user satisfaction.

MEASURABLE IMPACT
Quantified business outcomes

🪙 Cost Savings
Reduce cost for companies
possibly 82% reduction
Per ticket cost

⏱ Time Efficiency
from hours to few minutes
85% faster
Resolution time

📊 Accuracy Gain
72% → 89%
+17 points
Classification

ROADMAP & VISION
Next-generation capabilities

Mobile-First Experience
Native iOS/Android apps for on-the-go support

Global Scale
Multi-language support for international deployment

Predictive Intelligence
Anticipate issues before they're reported and auto resolve issues

Advanced AI Integration
Custom LLM + voice-to-ticket + enterprise connectors

Bibliography

[1] ITSM Dataset • [2] Django REST Framework • [3] Sentence-BERT

[4] FAISS (Facebook AI) • [5] XGBoost (Chen, 2016) • [6] RAG (Lewis et al., 2020)

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