Proposed solution

The proposed solution involves developing an AI-driven ticket routing system integrated within the existing ServiceNow environment to automate the assignment of support tickets. This system leverages TensorFlow for intelligent classification and Spring Framework for seamless backend integration and workflow automation.

Key Components:

1. Data Collection and Preprocessing:
Historical ticket data from ServiceNow—including issue type, keywords, resolution time, and team assignments—is extracted, cleaned, and preprocessed to train the machine learning model.

2. Machine Learning Model (TensorFlow):
A deep learning model is built using TensorFlow to classify incoming tickets into categories such as hardware, software, network, or access issues.

The model uses natural language processing (NLP) techniques to analyze ticket descriptions.

Based on patterns learned from historical data, it predicts the most suitable support group or agent.

3. Integration with ServiceNow via Spring Framework:
The backend system developed with Spring handles API communication between the ML model and ServiceNow.

When a new ticket is raised, it's automatically sent to the ML service.

The prediction result (appropriate team or agent) is returned and updated in the ServiceNow ticket fields instantly.

4. Workload Balancing Mechanism:
The system monitors agent availability and workload in real time, ensuring tickets are evenly distributed.

If one agent or team reaches capacity, the next best available agent is automatically selected.

This improves overall efficiency and prevents bottlenecks.

5. Dashboard and Analytics:
A dashboard is integrated into ServiceNow to visualize:

Ticket volume and distribution trends

Average response and resolution time

Model accuracy and performance metrics

Workload balance among support agents

6. Continuous Learning and Feedback Loop:
The model retrains periodically using new ticket data and feedback from resolved tickets, improving classification accuracy over time.

Outcome:
By automating ticket routing, the proposed solution minimizes manual intervention, ensures faster issue resolution, improves customer satisfaction, and enhances transparency in support operations.