# **AI-Driven Intelligent Engineering Assistant (AIEA)**

## **Objective**

The goal of this project is to create an **AI-powered virtual assistant** to help engineers solve problems faster and improve their work experience. This assistant will use **Splunk and ServiceNow** to detect issues, suggest solutions, and automate tasks.

## **How It Works**

The AI Assistant will:

1. **Detect system issues automatically** by analyzing logs in Splunk.
2. **Predict future problems** before they cause failures.
3. **Create and manage tickets in ServiceNow** automatically.
4. **Provide solutions to engineers** through an AI chatbot.
5. **Give performance insights** using an interactive dashboard.

## **Step-by-Step Plan**

### **Step 1: Collect and Analyze Data**

* **What We Need:** Logs from servers, applications, and errors stored in Splunk.
* **How We Do It:**
  + Use Splunk’s AI tools to find patterns in logs.
  + Identify common errors and their causes.
  + Train an AI model to detect problems early.

### **Step 2: Predict and Prevent Issues**

* **What We Need:** Machine learning (ML) models to recognize future problems.
* **How We Do It:**
  + Train an AI model using past incident logs.
  + Identify signals that show when a failure might happen.
  + Alert engineers before an issue occurs.

### **Step 3: Automate Ticket Creation in ServiceNow**

* **What We Need:** AI to classify problems and assign the right solutions.
* **How We Do It:**
  + AI reads Splunk logs and understands the issue.
  + Automatically creates a ServiceNow ticket with all details.
  + Assigns the ticket to the best engineer based on past experience.

### **Step 4: AI Chatbot for Engineers**

* **What We Need:** A chatbot that answers engineers' questions and provides solutions.
* **How We Do It:**
  + Engineers ask the bot about errors (e.g., "What caused the last failure?").
  + The bot checks logs, finds past solutions, and suggests fixes.
  + If needed, the bot creates a ServiceNow ticket for further investigation.

### **Step 5: Performance Dashboard**

* **What We Need:** A dashboard showing system health, incidents, and team efficiency.
* **How We Do It:**
  + Use Splunk to collect real-time data on system performance.
  + Display trends, error patterns, and team productivity metrics.
  + Help engineers make better decisions by showing important insights.