

# Federato RiskOps Platform Optimization Challenge

## Challenge Overview

Welcome to the Federato RiskOps Platform Optimization Challenge! In this datathon, you will analyze user interaction data from the Federato RiskOps platform, a software-as-a-service (SaaS) solution used by insurance underwriters to assess business risks and provide coverage quotes.

Your goal is to identify patterns in user behaviour and optimize the next action for users to maximize engagement and time spent on the platform. Using event-based data that tracks user activities (e.g., page visits, button clicks, form entries), you will explore how specific actions impact user retention and develop strategies to increase daily usage over a 28-day period.

This is an exciting opportunity to apply data science, causal inference, and optimization techniques to a real-world SaaS product, where insights can lead to improved platform usability and enhanced business performance.

## Challenge Objectives

Participants will:

1. Explore and analyze user behavior data
  - Identify key features or actions that impact user retention.
  - Detect patterns that lead to higher engagement and longer session times.
  - Analyze the sequence of events that contribute to increased platform usage.
2. Develop an Optimization Framework for Next-Action Recommendations
  - Propose a data-driven framework that suggests actions users should take next to maximize time spent on the platform.
  - Investigate different approaches:
    - Predictive modeling: Suggest the next feature a user should engage with based on past behaviour.
    - Graph-based analysis: Identify power nodes (high-value interactions) that increase engagement across users.
    - Causal inference: Determine which user actions lead to higher retention.
3. Provide Actionable Insights for Federato's Platform Improvement
  - Explain how recommended actions can be surfaced to users in real-time at decisive moments (e.g., when they are about to exit the platform).
  - Suggest strategies to encourage longer daily usage and improve feature adoption.

## Optional Advanced Challenges

### 1. User Journey Mapping Challenge

- **Objective:** Develop a comprehensive visualization and analysis of user progression through the Federato RiskOps platform
- **Key Deliverables:**
  - Detailed user journey map illustrating interaction flows
  - Identification of critical transition points and potential drop-off zones
  - Comparative analysis of navigation patterns across different user roles and company types

### Evaluation Criteria

Submissions will be evaluated based on:

#### Exploratory Data Analysis & Insights (30%)

- Effectiveness in identifying key trends in user engagement and platform stickiness.
- Clear reasoning for choosing specific metrics (e.g., session duration, feature adoption, or drop-off rates).
- Ability to explain how certain actions influence overall platform usage and retention.

#### Optimization Framework & Methodology (30%)

- Strength of the proposed framework in guiding users toward actions that maximize engagement.
- Ability to pinpoint moments where real-time recommendations could prevent drop-off.
- Applicability of the approach across different user types and insurance companies using Federato.

#### Business Impact & Feasibility (20%)

- Strength of the approach (e.g., predictive modeling, graph analysis, causal inference).
- How well the proposed solution can be implemented within Federato's platform in a dynamic setting.
- Demonstrates an understanding of how the dataset can be used to provide real-time recommendations.

#### Innovation & Creativity (10%)

- Ensures that recommendations align with increasing daily user engagement over a 28-day period.
- Real-world viability of the proposed next-action recommendations.
- Insights into how the recommendations will help underwriters stay engaged longer and use high-value features more effectively.

**Clarity & Presentation (10%)**

- Well-structured explanations with a logical flow.
- Well-documented, modular, and understandable code.
- Clarity in presenting key trends, insights, and recommendations through dashboards, graphs, or other mediums.

**Submission Requirements**

- A detailed report explaining methodology, findings, and recommendations.
- A visual representation (e.g., dashboards, graphs, or network diagrams) showcasing key insights. (Streamlit or Plotly preferred)
- A code notebook or script (Jupyter or Colab) demonstrating the analytical workflow.
- Optional: A presentation summarizing key takeaways.