

Proposal of an AI-Based Support Assistant for the ALICE-FIT Detector Setup at CERN

Abstract

We propose an AI-based assistant designed to support the ALICE Fast Interaction Trigger (FIT) detector operators at CERN. The assistant helps diagnose and resolve operational issues in the Detector Control System (DCS), where decisions must often be made quickly and with incomplete information. By combining Large Language Models (LLMs) with a controlled Retrieval-Augmented Generation (RAG) pipeline, the system can generate context-aware suggestions based on verified ALICE-FIT documentation and problems that have appeared in the past.