Platform for Managing Simulation

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Simulation Management for Computing Systems & Communication Networks

Introduction

- The Platform for Managing Simulation is designed to streamline the management of simulations, particularly for computing systems and communication networks. It provides tools for monitoring, analyzing, and customizing simulations to enhance research efficiency and support real-time decision-making.

Problem Definition

- Managing simulations for computing systems and communication networks is complex and time-consuming. The lack of real-time monitoring and limited customization options result in longer research cycles, inefficiency, and missed optimization opportunities.

Project Goals

- The goal of this project is to develop a simulation management platform that:
- - Automates the management of simulations
- - Provides real-time monitoring and insights
- - Allows customization of simulation parameters
- - Optimizes research processes for simulations in the field of computer systems and communication networks

Key Features

- - Dynamic tracking and filtering of running simulations
- - Customizable simulation creation with user-defined parameters
- - Real-time insights into simulation performance and results
- - Integration with external systems for seamless simulation analysis

Tech Stack

- - **Backend**: Python, FastAPI
- - **Frontend**: React, TypeScript
- - **Database**: MongoDB
- - **Tools**: Docker, Redux, Pandas

System Architecture

- The platform integrates a client-server architecture with RESTful APIs, allowing seamless communication between the frontend, backend, and external systems. It supports dynamic simulation tracking, real-time monitoring, and detailed analysis of simulation results.

Conclusion

- The Platform for Managing Simulation enhances the efficiency of research in computing systems and communication networks by providing advanced tools for managing, analyzing, and optimizing simulations. It allows users to streamline their workflows, gain real-time insights, and improve decision-making in complex simulation environments.