USER INTERFACE NAVIGATION PATENT

United States Patent Application No. 16/789,432

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ABSTRACT

A system and method for intelligent user interface navigation in enterprise software applications, comprising a machine learning-enabled interface adaptation engine that dynamically modifies navigation paths and interface elements based on user interaction patterns and contextual data. The system utilizes predictive algorithms to optimize workflow efficiency through automated interface personalization and contextual element positioning.

BACKGROUND OF THE INVENTION

[0001] Enterprise software applications frequently present complex navigation challenges that reduce user productivity and increase training requirements. Traditional static user interfaces fail to adapt to individual user needs and workflow patterns, resulting in inefficient navigation paths and reduced operational effectiveness.

[0002] Existing solutions typically rely on predetermined navigation structures that cannot dynamically adjust to evolving user requirements or operational contexts. This limitation creates persistent inefficiencies in enterprise environments where workflow optimization is critical to operational success.

SUMMARY OF THE INVENTION

[0003] The present invention provides systems and methods for intelligent user interface navigation, comprising:

(a) A machine learning engine that analyzes user interaction patterns;

(b) Dynamic interface element repositioning based on predictive usage analysis;

(c) Contextual navigation path optimization using real-time operational data;

(d) Automated workflow adaptation based on role-specific usage patterns.

DETAILED DESCRIPTION

1. System Architecture

[0004] The system comprises:

1 A central processing unit executing the interface adaptation engine;

2 A machine learning module for pattern recognition and prediction;

3 A data collection and analysis framework;

4 A dynamic interface rendering engine;

5 Secure API endpoints for enterprise system integration.

2. Core Functionality

[0005] The invention operates through:

1 Continuous collection of user interaction data;

2 Pattern analysis using proprietary machine learning algorithms;

3 Real-time interface element optimization;

4 Predictive navigation path generation.

3. Implementation Methods

[0006] The system implements through:

1 Integration with existing enterprise applications;

2 Secure data collection and processing protocols;

3 Configurable optimization parameters;

4 Role-based implementation frameworks.

CLAIMS

A computer-implemented method for intelligent user interface navigation, comprising:

a) Collecting user interaction data through secure monitoring protocols;

b) Analyzing interaction patterns using machine learning algorithms;

c) Dynamically modifying interface elements based on predictive analysis;

d) Generating optimized navigation paths for specific user roles.

The method of claim 1, further comprising:

a) Integration with enterprise authentication systems;

b) Secure data storage and processing;

c) Configurable optimization parameters;

d) API-based system integration capabilities.

A system for implementing the method of claim 1, comprising:

a) Processing units executing the interface adaptation engine;

b) Machine learning modules for pattern analysis;

c) Secure data storage and transmission components;

d) API endpoints for enterprise system integration.

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ASSIGNMENT

All rights, title, and interest in this patent application are assigned to Summit Digital Solutions, Inc., a Delaware corporation with offices at 1234 Innovation Drive, San Francisco, CA 94105.

POWER OF ATTORNEY

The undersigned hereby appoints Patent Law Group LLP, Registration No. 12345, to prosecute this application and transact all business in the United States Patent and Trademark Office connected therewith.

DECLARATION

I hereby declare that I believe I am the original inventor of the subject matter which is claimed and for which a patent is sought; that the foregoing is true and that all statements made herein of my own knowledge are true.

Executed on: March 15, 2022

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CERTIFICATION

I hereby certify that this patent application is being deposited with the United States Patent and Trademark Office on March 15, 2022.

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