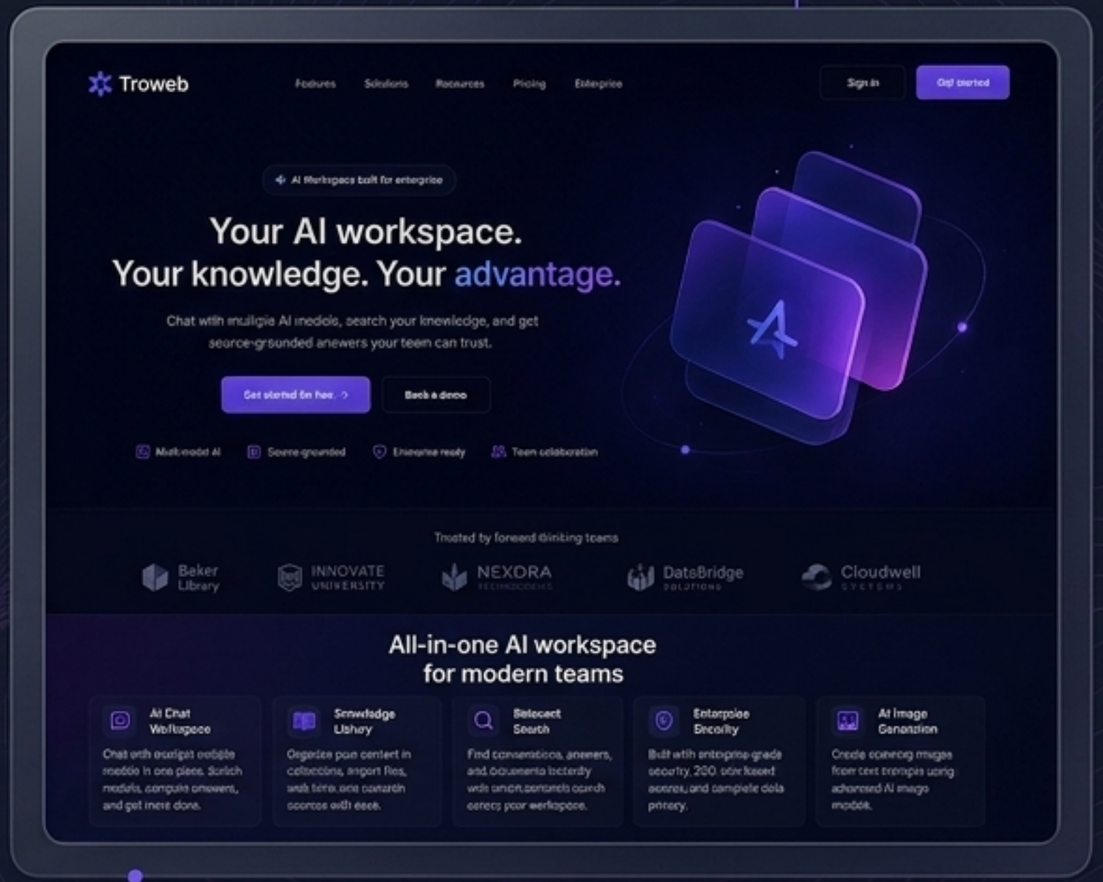
Building enterprise AI workspaces with modern frontend architecture

Portfolio Case Study: Troweb



Mohammad Kiyan | Frontend Developer

Role: Frontend Developer | Domain: Enterprise AI Workspace

NotebookLM

Delivering a multi-model AI platform designed for enterprise security and scale

Developer's Mandate

Project: Troweb (Enterprise AI Knowledge Workspace)

Objective: Combine multiple LLMs, organizational knowledge, and powerful search into a single, unified frontend application.

Scope of Execution

- Multi-model AI chat interfaces
- Source-grounded answer rendering
- Complex state management for knowledge libraries
- Enterprise access control flows

AI Chat Workspace

Chat with multiple leading models in one place. Switch models, compare answers, and get more done.

Knowledge Library

Organize your content in collections. Import files, web links, and research sources with ease.

Relevant Search

Find conversations, answers, and documents instantly with smart semantic search across your workspace.

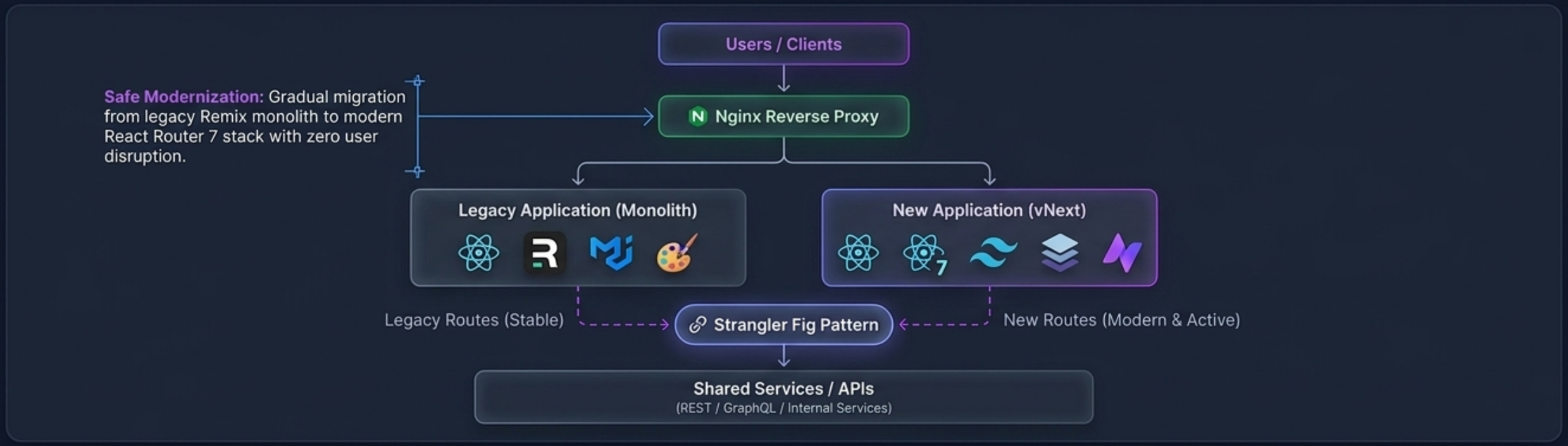
Enterprise Security

Built with enterprise-grade security, SSO, role-based access, and complete data privacy.

Role: Frontend Developer | Domain: Enterprise AI Workspace

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Executing the Strangler Fig pattern for zero-downtime frontend modernization



Legacy vs. vNext

Legacy Application - Monolith

Stable / Sunset

New Application - vNext

Modern & Active

Role: Frontend Developer | **Domain:** Enterprise AI Workspace

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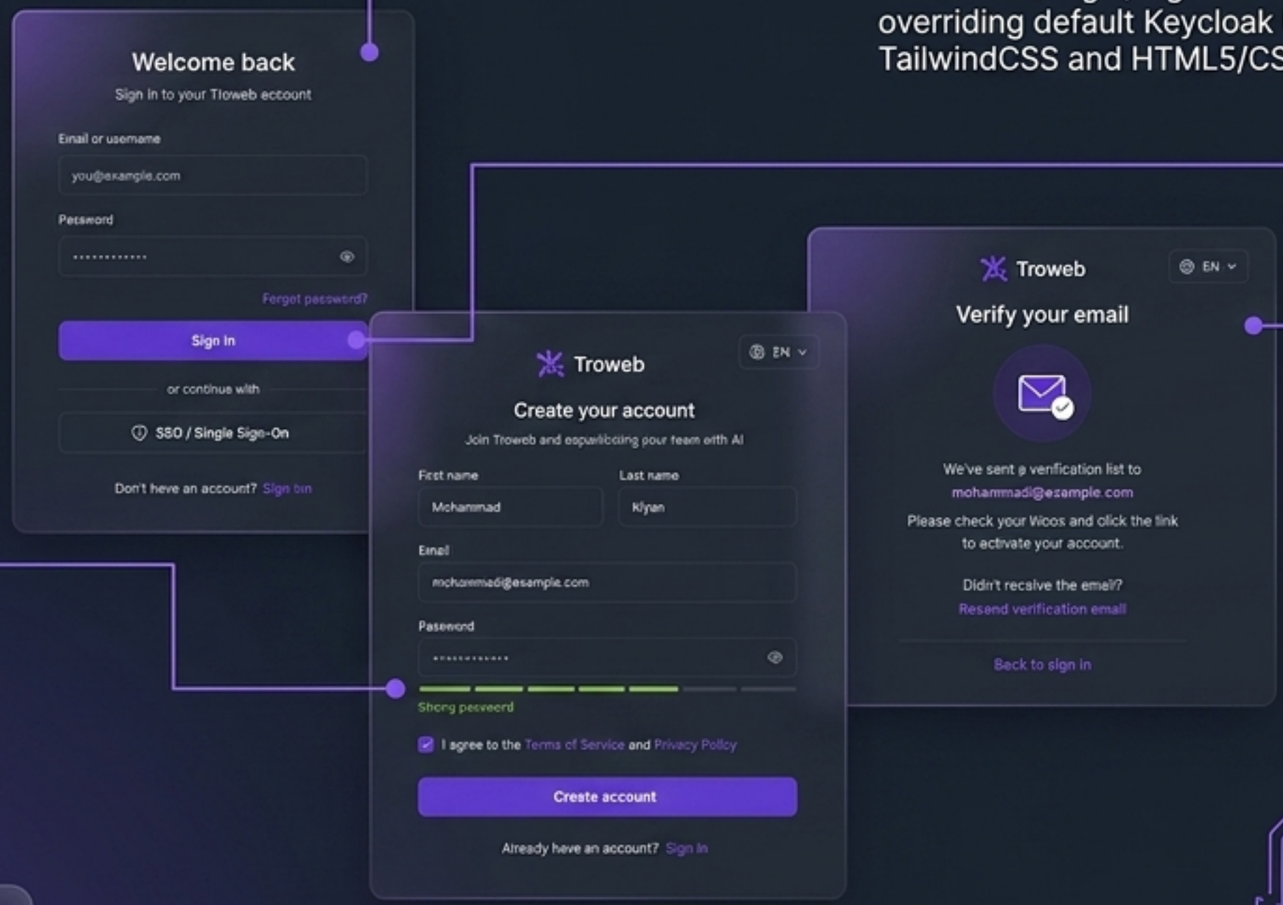
Customizing Keycloak for a seamless, branded enterprise identity experience

Branded Keycloak Theme: Fully customized login/registration overriding default Keycloak UI using TailwindCSS and HTML5/CSS3.

Enterprise Ready: Integrated SSO and role-based access control flows.

Enterprise U:X & Validation: Secure flows, flowsd, verifcation and reset with eamcvrsctsxpiertecurs.

Enhanced UX & Validation: Real-time validation and clear error handling utilizing React state.



Keycloak | React | TypeScript | TailwindCSS

Role: Frontend Developer | **Domain:** Enterprise AI Workspace

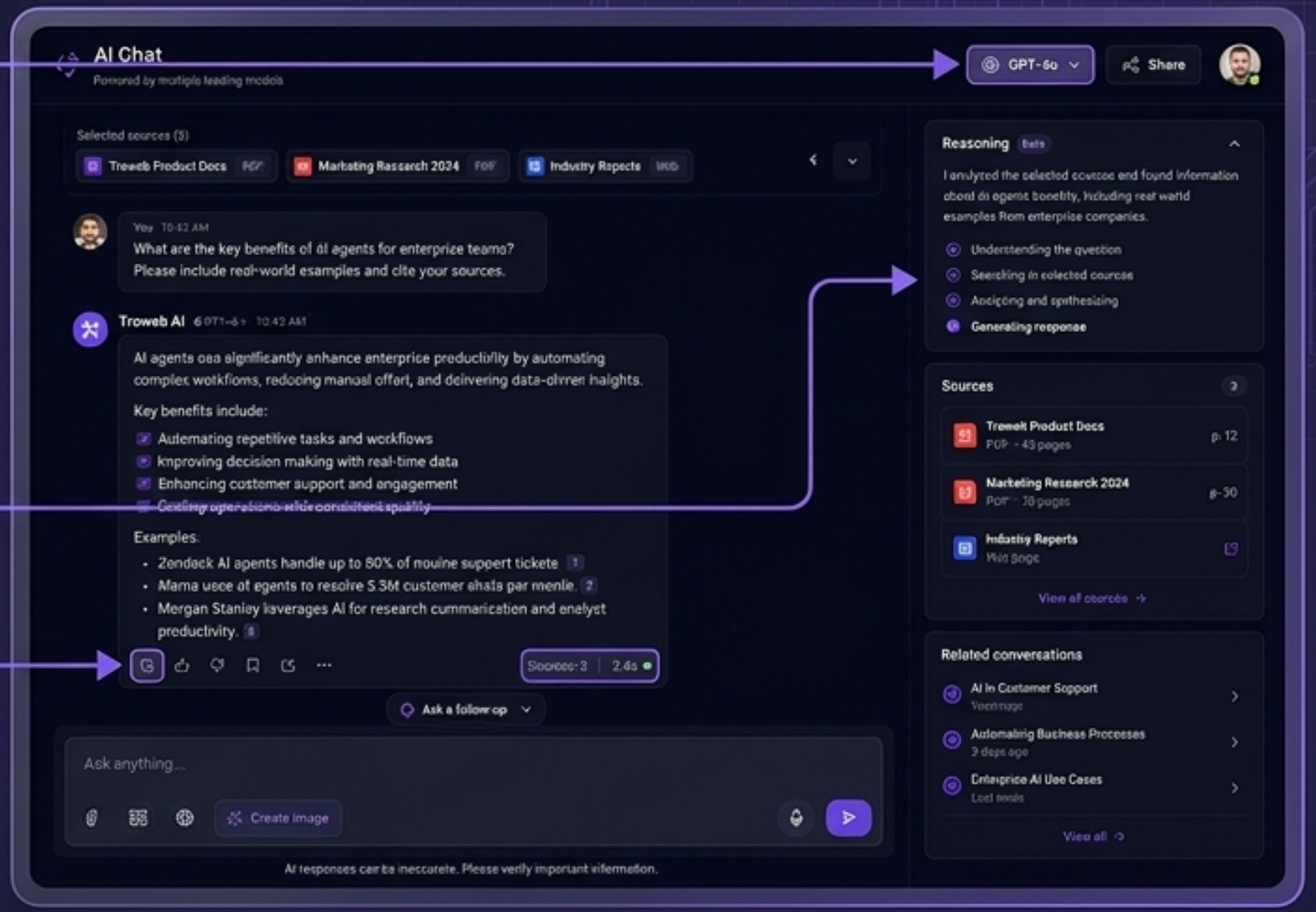
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Orchestrating complex streaming state for multi-model AI interactions

Model Orchestration: Dynamic state switching between leading models (GPT-4o, Claude, Gemini).

Real-Time Synthesis: Rendering complex LangChain/LangGraph streaming responses and agentic workflows.

Source-Grounded Architecture: Mapping backend reference data to inline UI citations for verifiable answers.



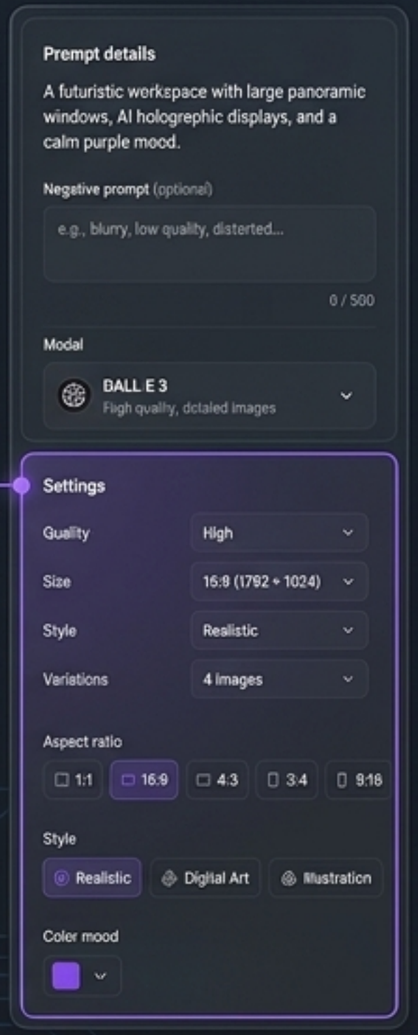
React | GraphQL | LangChain

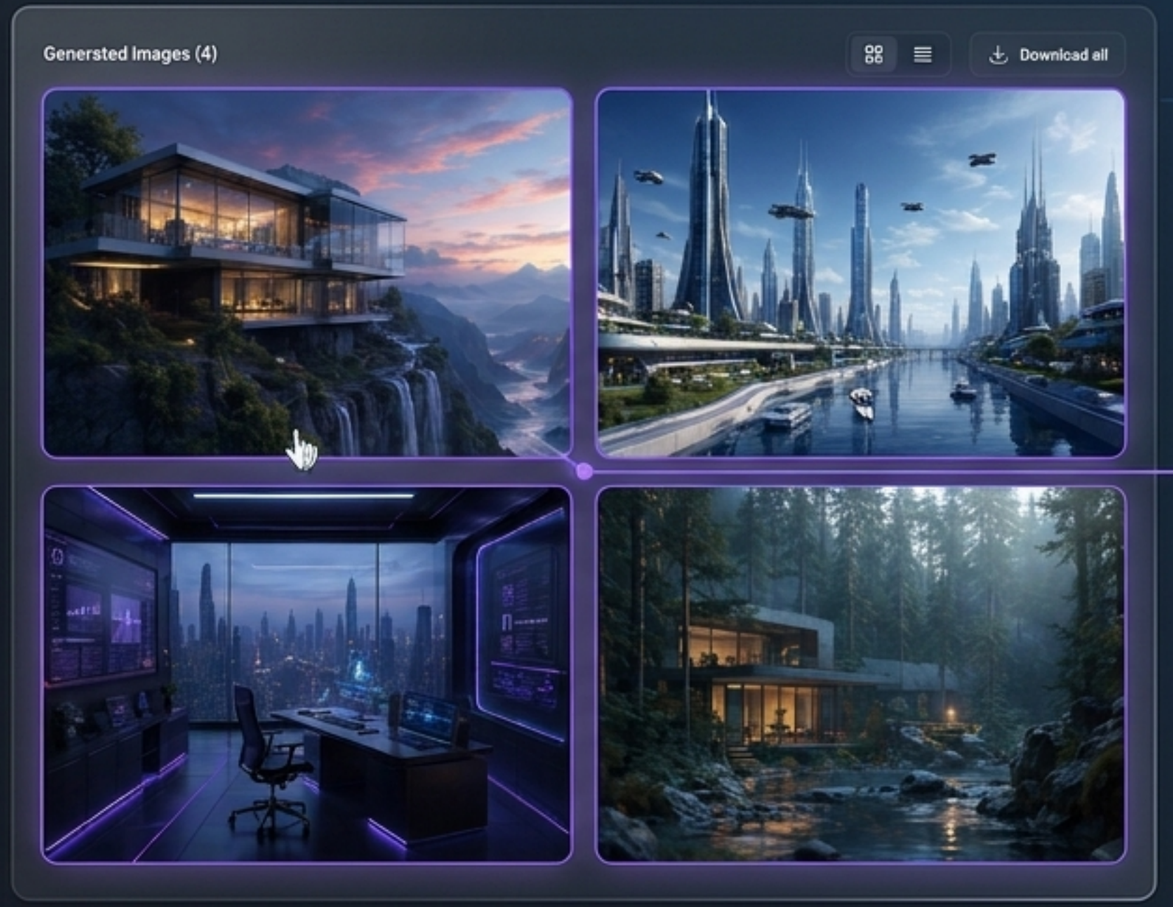
Role: Frontend Developer | **Domain:** Enterprise AI Workspace

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Managing rich user inputs and dynamic media rendering

State Management: Handling multi-parameter inputs (aspect ratio, style, mood) to construct precise DALL-E 3 API payloads.





Responsive Media Grid: Optimized rendering of high-resolution AI outputs with download and history-tracking tracking states.

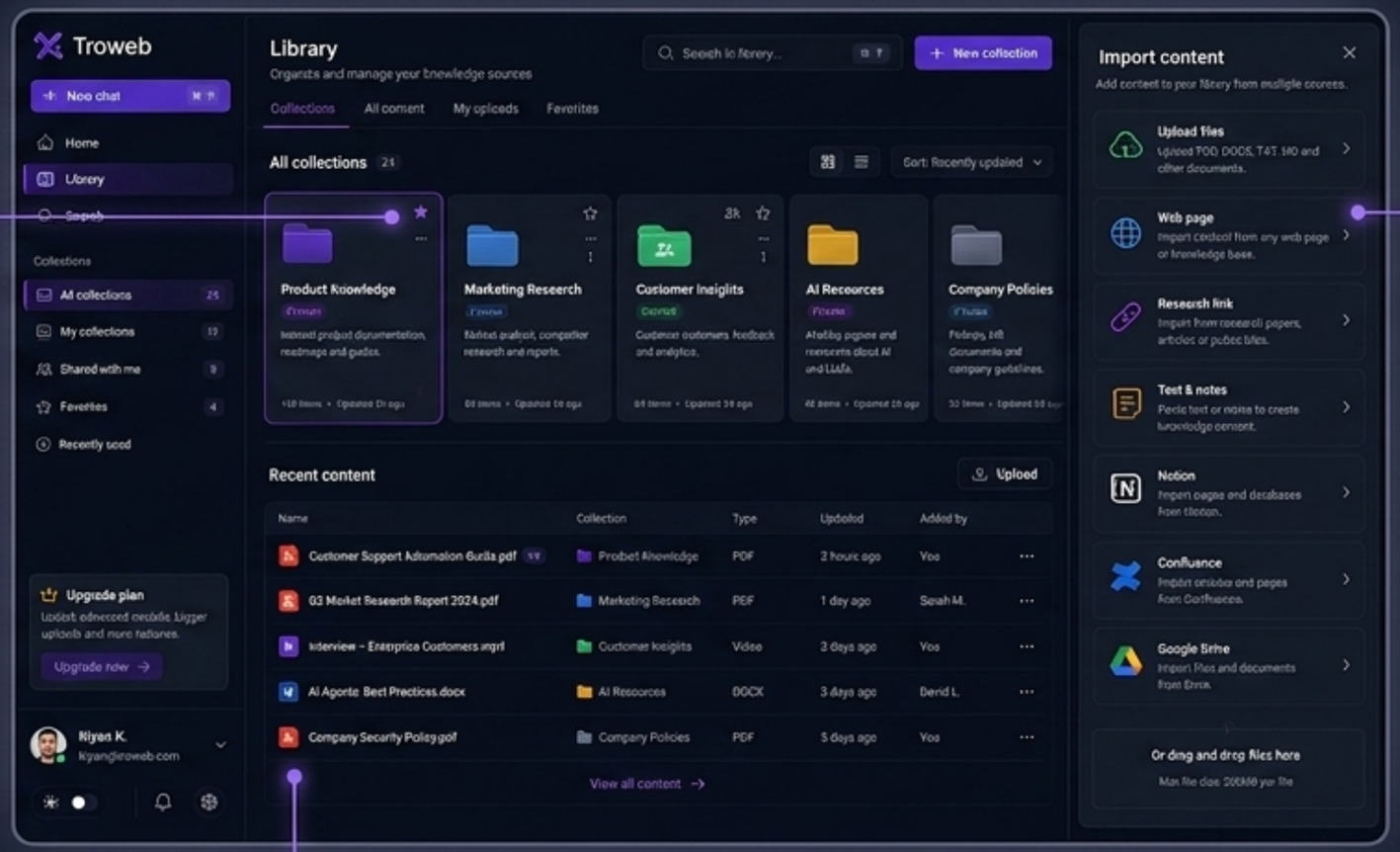
TypeScript | React | TailwindCSS

Role: Frontend Developer | **Domain:** Enterprise AI Workspace

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Unifying diverse data pipelines into an intuitive knowledge library

Role-Based Visibility: UI conditional rendering based on Keycloak enterprise access protocols.



Multi-Source Ingestion: Unified UI handling varied import flows (Local Uploads, Web Pages, Notion, Confluence, Google Drive).

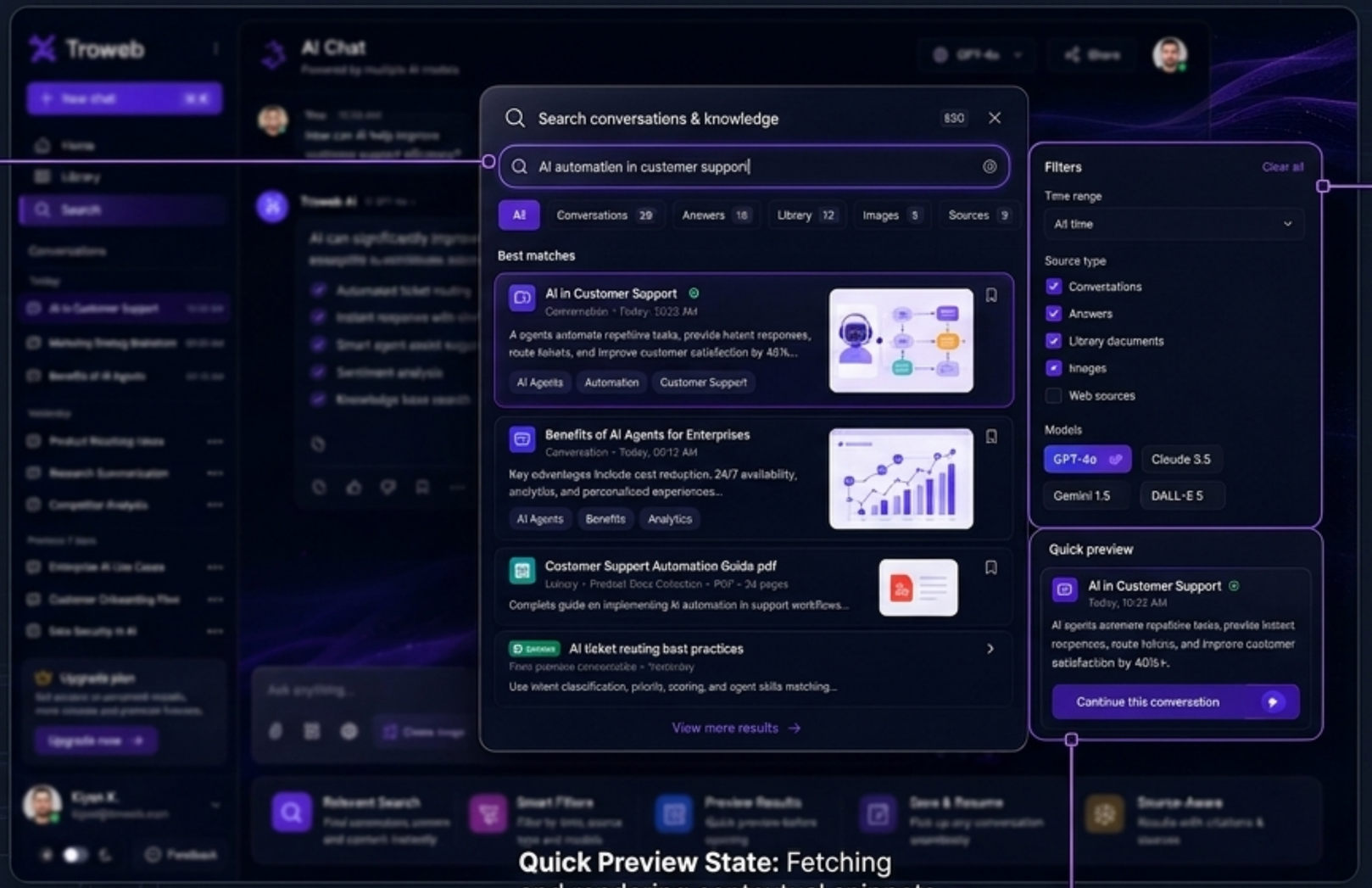
Structured Data Rendering: Mapping complex backend data structures (PDF, DOCX, MP4) into sortable, filterable frontend tables.

Role: Frontend Developer | **Domain:** Enterprise AI Workspace

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Engineering high-performance, keyboard-first retrieval systems

Keyboard-First Navigation: Implementing complex event listeners for seamless CMD+K global access and keyboard traversal.



Dynamic Querying: Real-time filtering by time range, source type, and specific LLM models.

Quick Preview State: Fetching and rendering contextual snippets without navigating away from the current view.

Role: Frontend Developer | Domain: Enterprise AI Workspace

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Operating seamlessly within a comprehensive modern ecosystem



True **frontend mastery** requires understanding the systems beneath it. The **Troweb** architecture connects a **high-performance React UI** to scalable **Kubernetes** infrastructure, robust **GraphQL** data fetching, and intelligent **LangChain** orchestration—all secured by custom **Keycloak flows**.

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