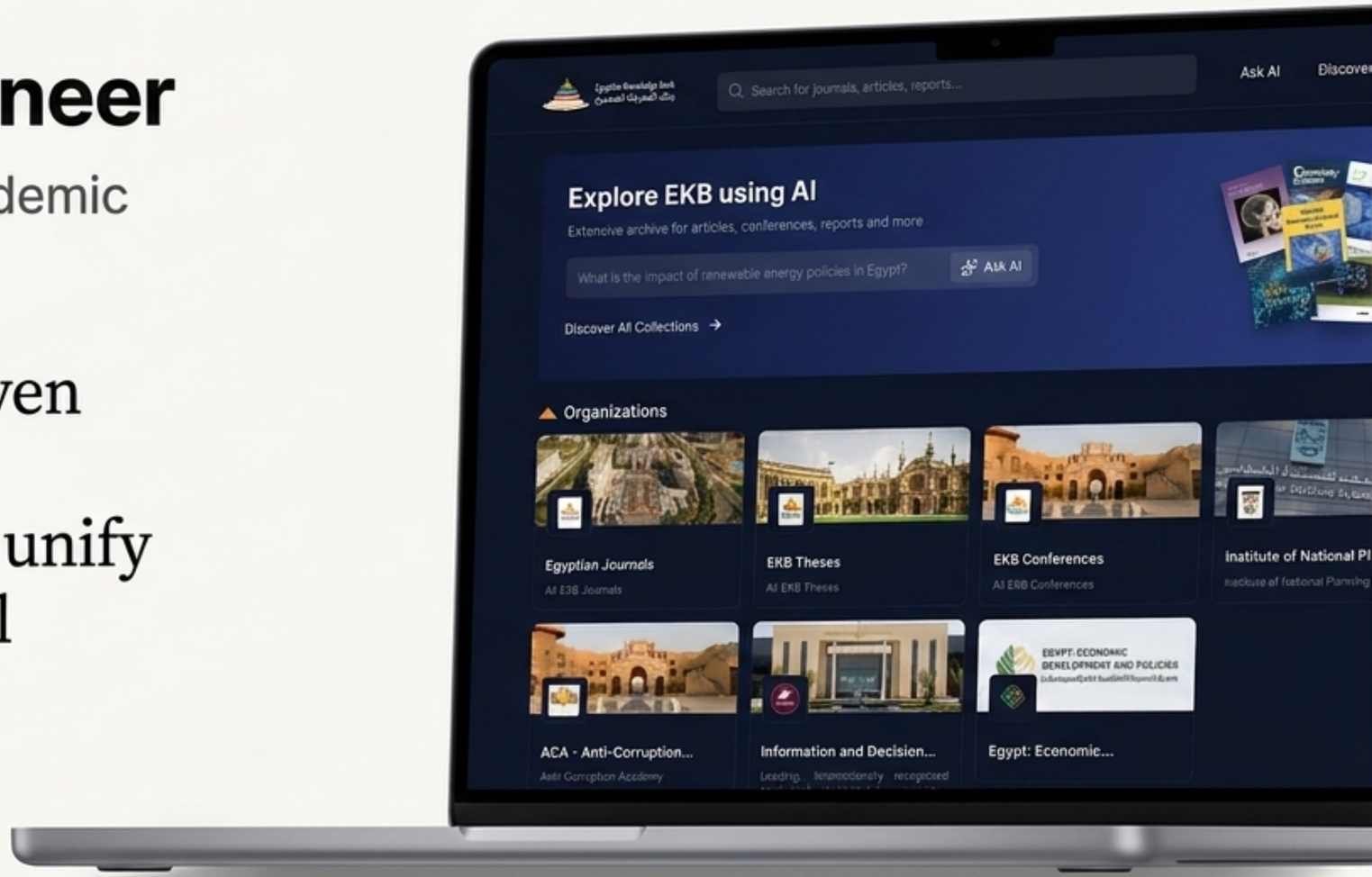
# Senior Frontend Engineer

## EKB Repository — AI-Powered Academic Knowledge Platform

Building a large-scale, AI-driven academic repository for the Egyptian Knowledge Bank to unify semantic search, hierarchical content, and enterprise data ingestion.




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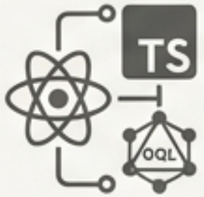
**600K+** Academic Records

Journals, articles, theses, reports, and conferences.



**B2C Discovery** + B2B Operations

Implemented **consumer-grade** AI discovery UI alongside dense admin data-harvesting workflows.




React, TypeScript, GraphQL

Primary UI stack: React Router, Vite, TailwindCSS, shadcn/ui.

## Core Contribution

Led the **frontend implementation**, bridging complex **academic metadata** with **consumer-grade AI discovery** and delivering **complete operational visibility for system admins**.

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## Public Discovery Experience

- AI conversational chat
- Semantic search with instant suggestions
- Complex metadata navigation
- Embedded PDF viewing

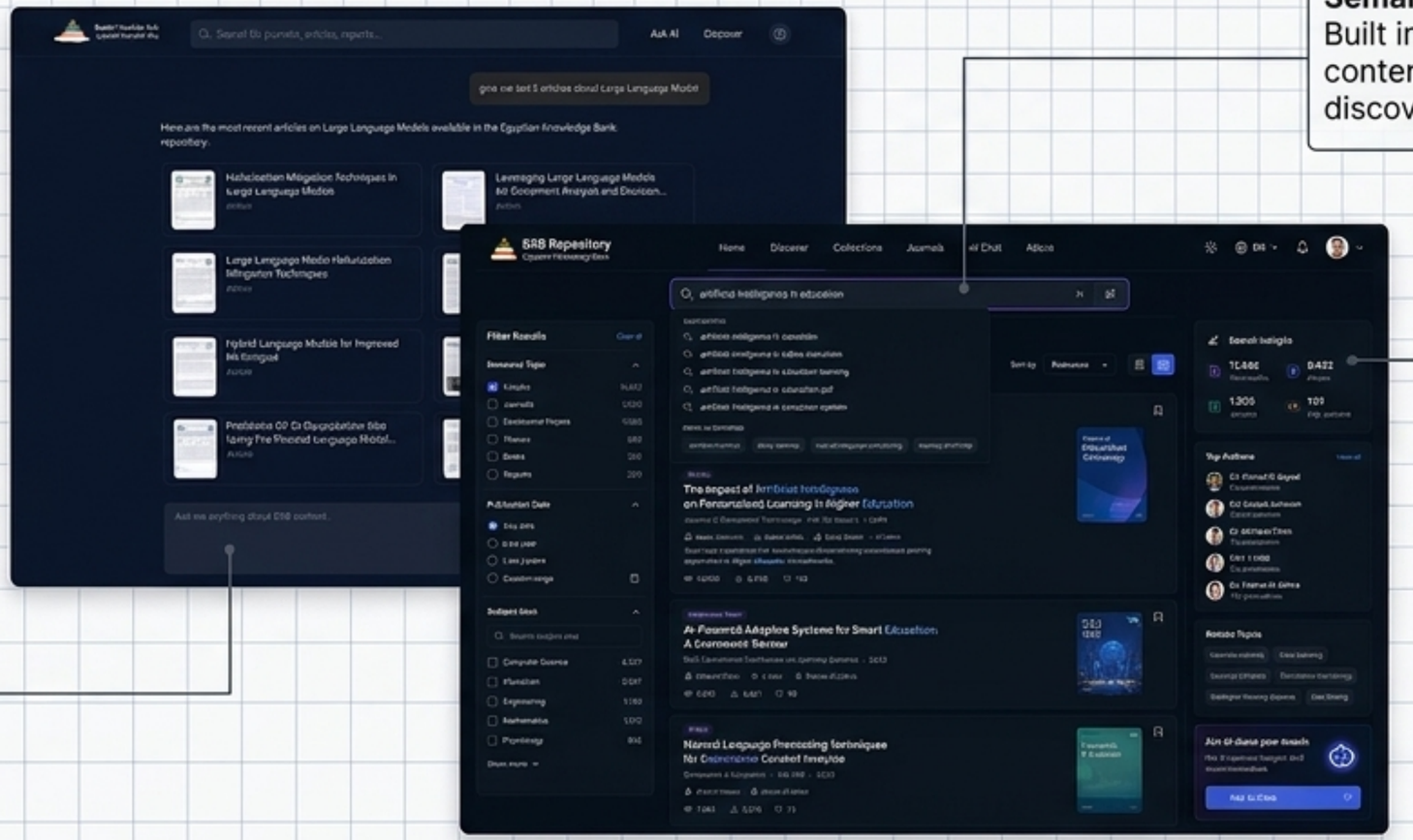
## Admin & Operations Tooling

- Time-series analytics dashboards
- Harvester job configuration
- Real-time event streams
- Error diagnostics

End-to-End Ownership: Architected reusable React/TypeScript modules that maintain consistent interaction patterns across both public consumption and administrative control.

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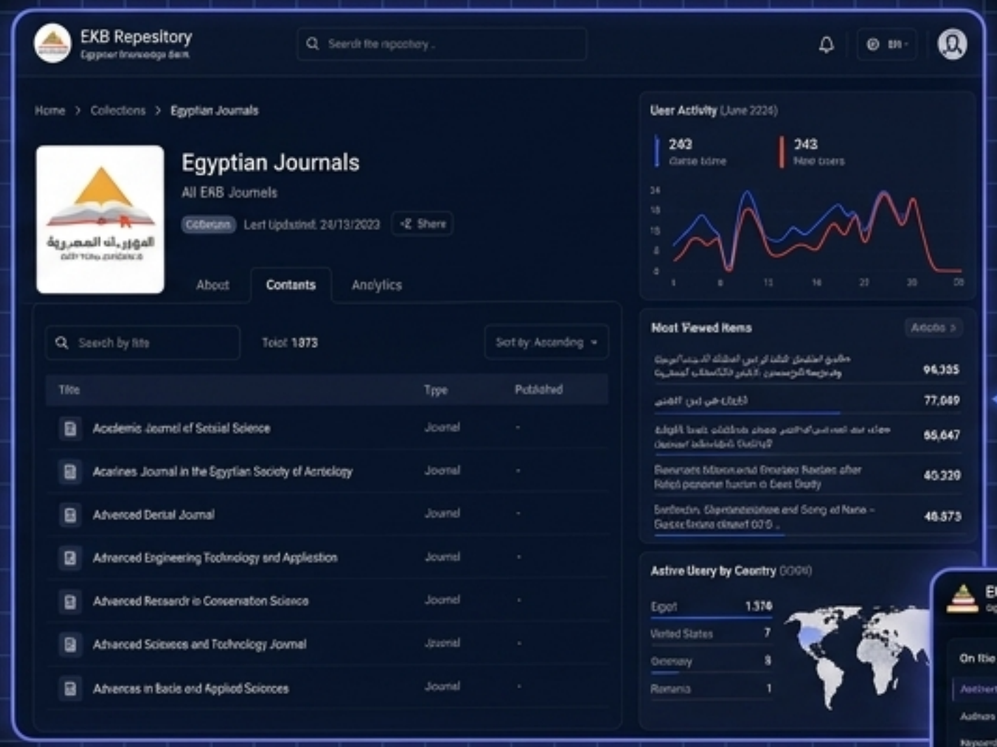
**Semantic Search Experience:**
Built instant suggestions, content previews, and advanced discovery flows.

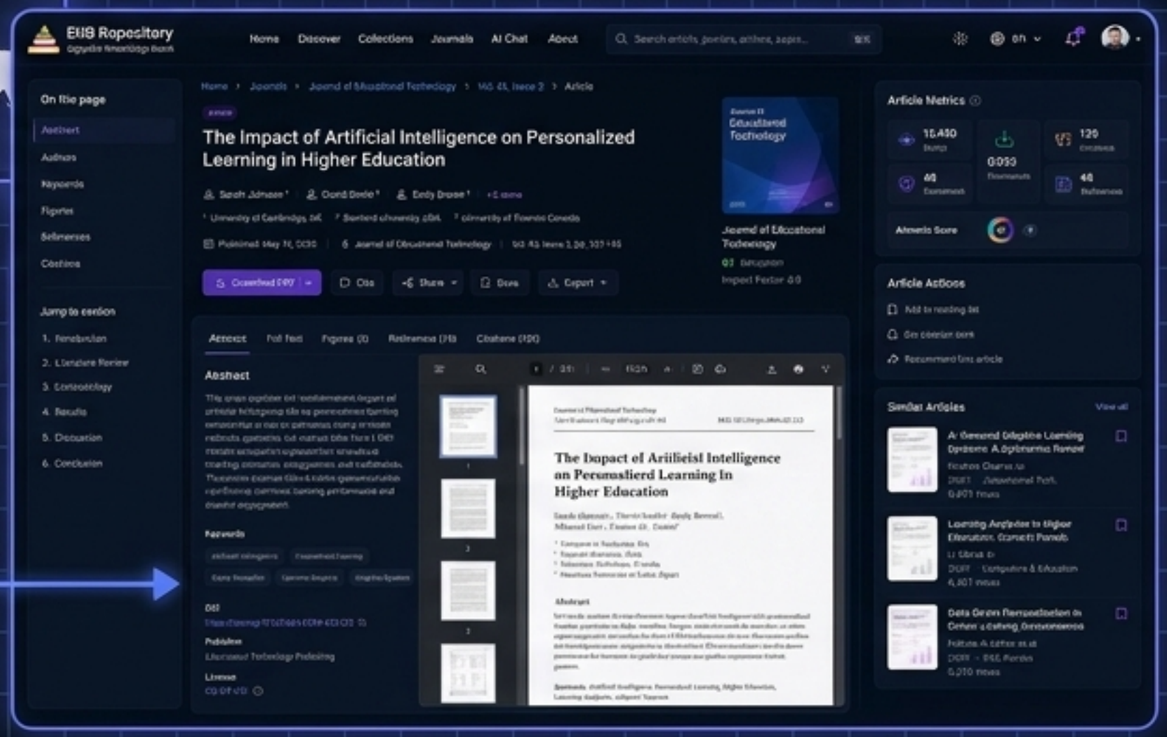



**Advanced Discovery:**
Filtering by resource type, publication date, and subject area.

**Ask AI Chat Interface:**
Allows users to query repository content conversationally and receive peer-reviewed, source-backed scholarly recommendations.

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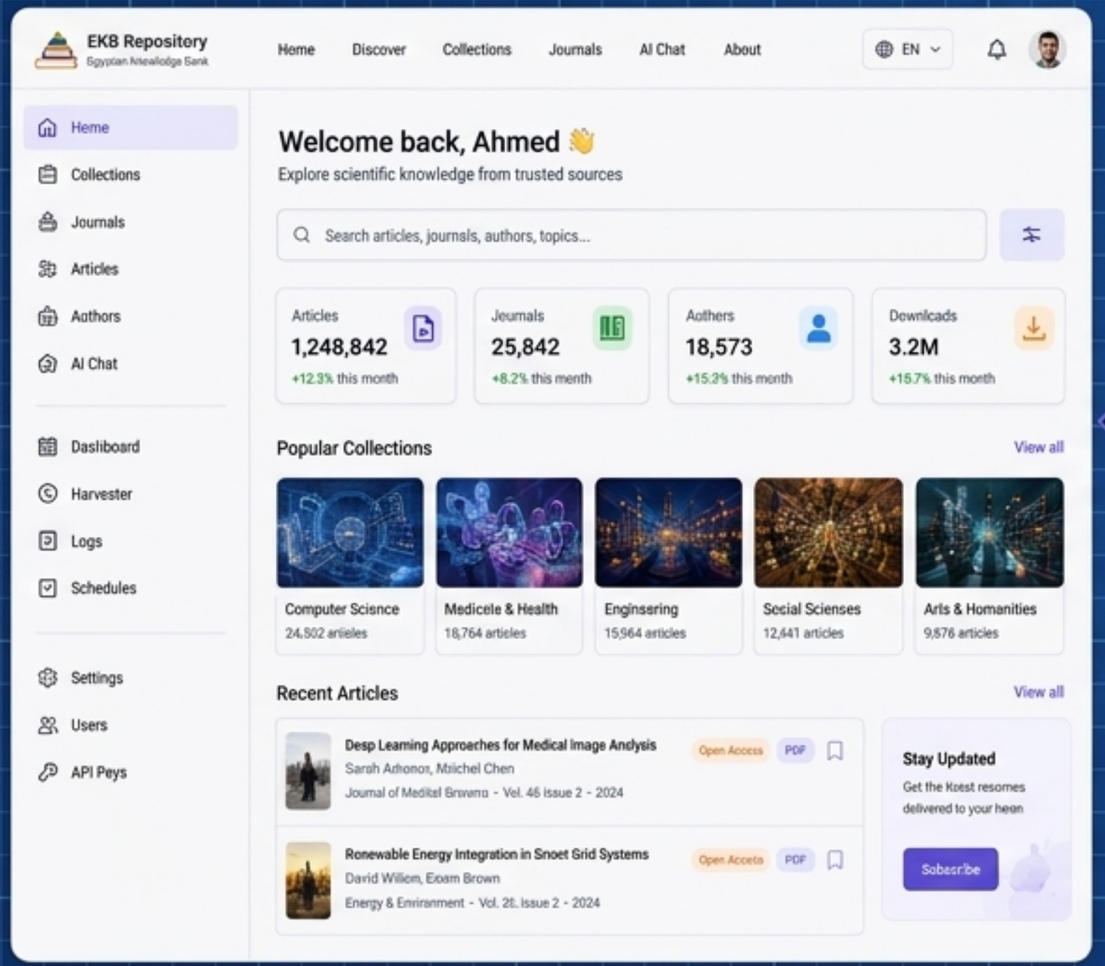

**Hierarchical Navigation**
Designed reusable detail pages for collections, journals, and volumes handling complex metadata models.

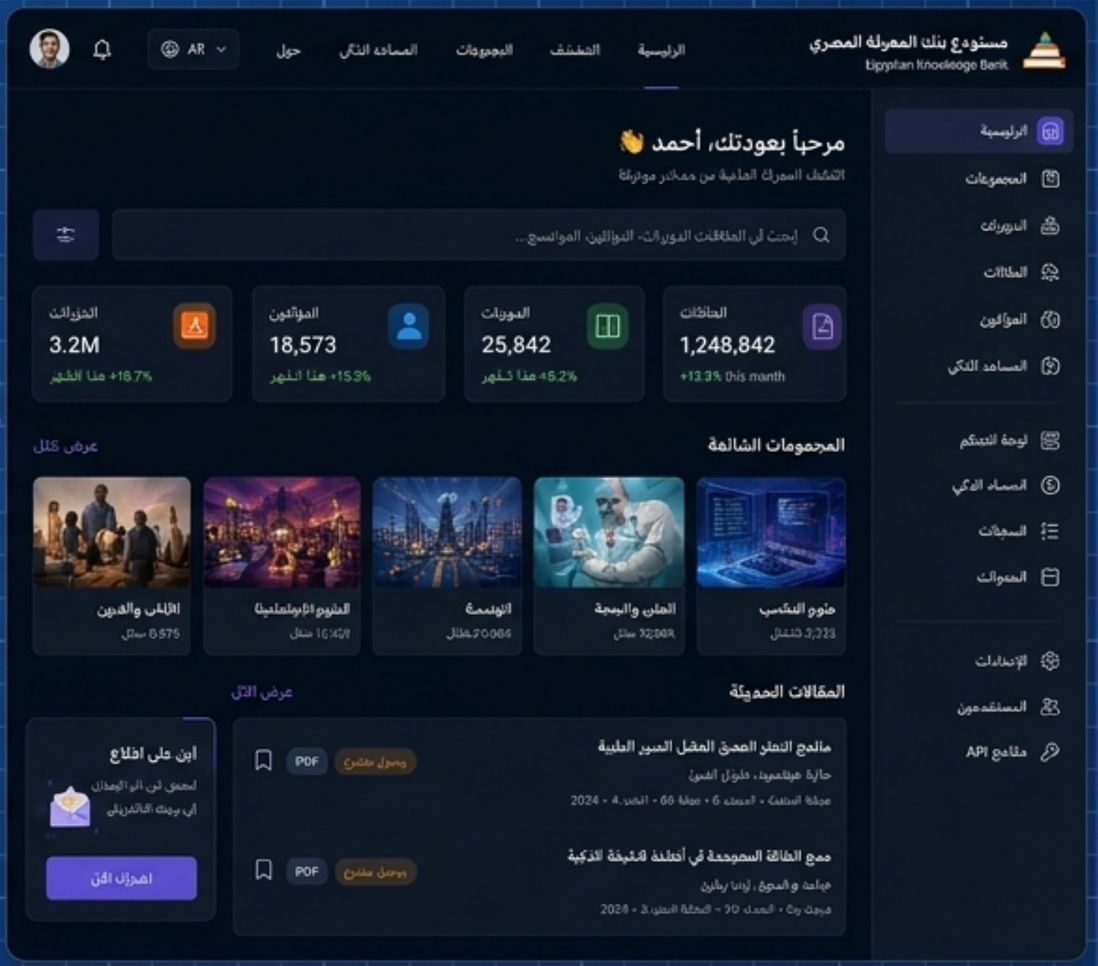
**Rich Item Pages**
Integrated embedded PDF reading alongside abstract metadata, DOI links, citation metrics, and similar-item recommendations.

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Fully adaptive layouts built for English (Left-to-Right).

Seamless switching to Arabic (Right-to-Left) with optimized Arabic fonts and typography.



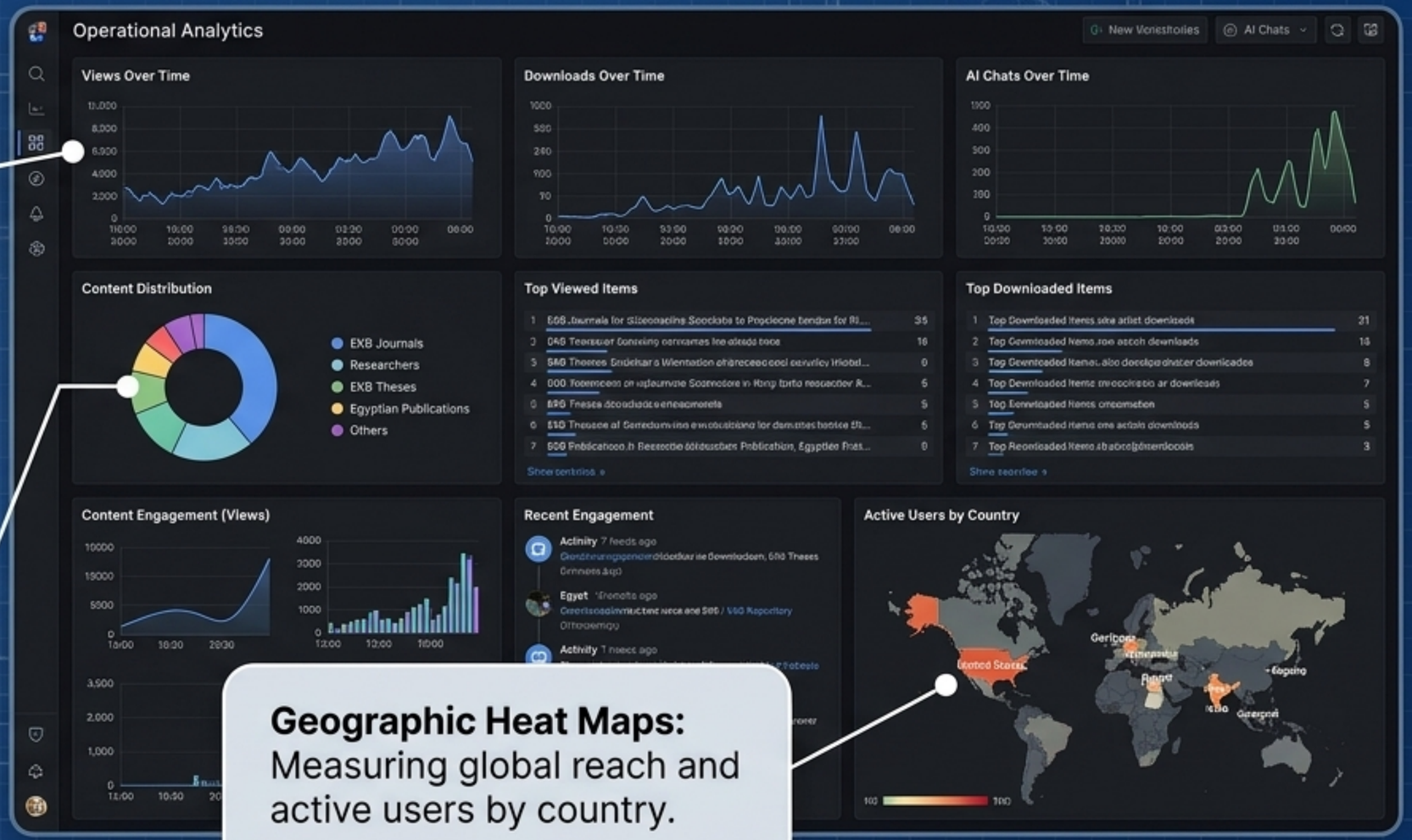

**Global Accessibility:** Delivered a unified, responsive design system that maintains spatial hierarchy and component integrity regardless of reading direction.

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# Created comprehensive analytics dashboards integrating Recharts/data visualization to surface repository intelligence for system administrators.

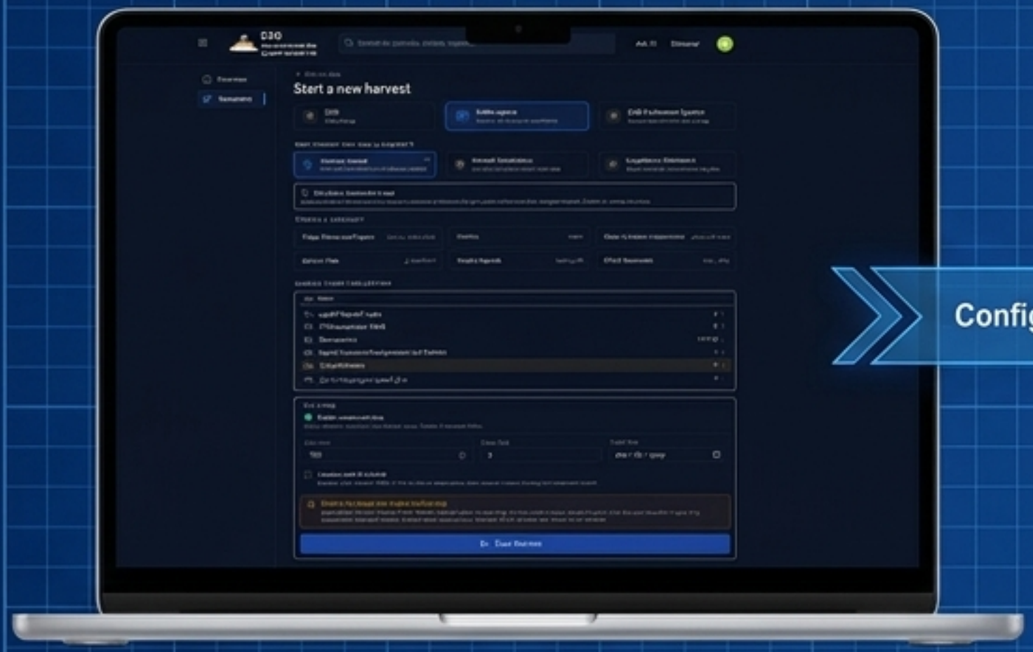
**Performance Trends:** Visualizing views, downloads, and AI chats over time.

**Content Distribution:** Tracking repository engagement across journals, theses, and researcher publications.

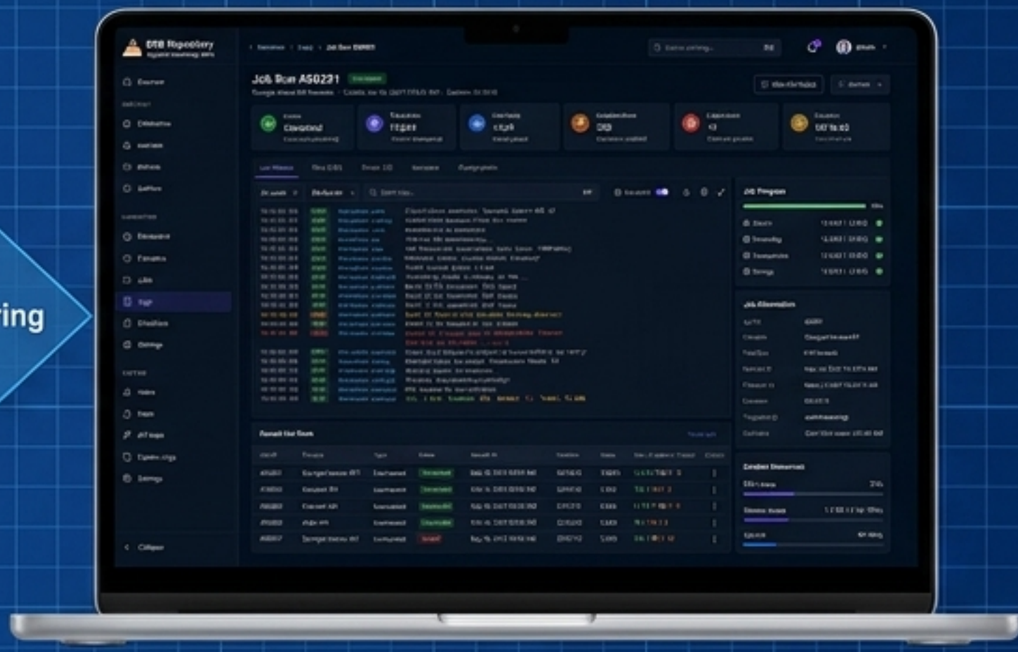



**Geographic Heat Maps:** Measuring global reach and active users by country.

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Configuration -> Execution -> Monitoring



## Admin-Facing Harvester Tools:

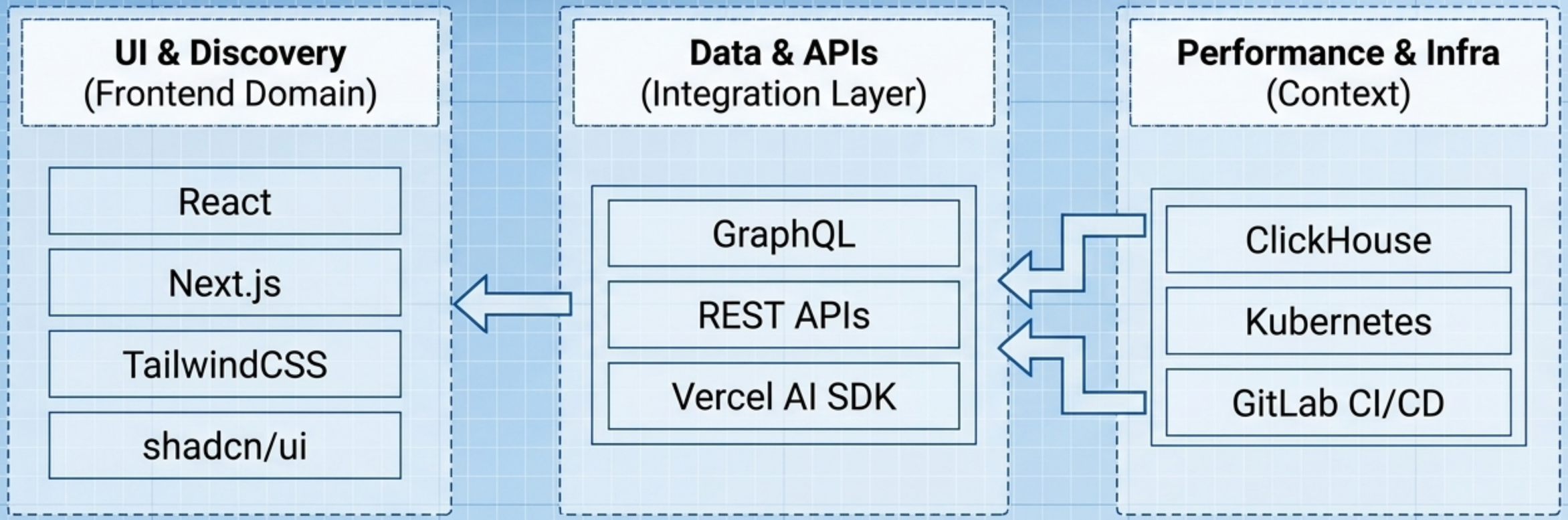
Configure ingestion jobs, connect multiple academic sources, map content to target collections, and customize import settings.

## Detailed Harvester Logging:

Real-time UI for job progress, processed items, event streams, and error diagnostics.

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# TECH STACK ARCHITECTURE BLUEPRINT




Delivered a scalable frontend architecture integrating **repository APIs**, **real-time AI tool** calling, and high-performance **columnar analytics** into a seamless user experience.

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## Production Scale

Managed UI performance and state across nearly 600K academic academic resources, ensuring sub-second discovery and seamless embedded document rendering.

## Interface Innovation

Integrated seamless LLM-backed conversational AI (Ask AI) into traditional search, modernizing academic research discovery.

## End-to-End Ownership

Delivered the complete frontend experience for both public consumers and internal data and internal data admins, handling everything from UI components to complex ETL monitoring workflows.

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