

# Transforming Data Accessibility in Higher Education

An innovative approach to democratizing institutional data through intelligent agents

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# Agenda

- What we'll cover:
  - Overview of data agents
  - Census Enrollment agent demo
  - Future Development
  - Q&A

# The Data Accessibility Challenge

## Current State

Institutional data often siloed across departments and systems

Limited self-service options for stakeholders needing information

## Consequences

Delayed decision-making due to report backlogs

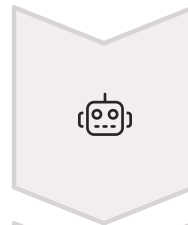
Data literacy gaps among staff, faculty and administrators

## Opportunity

AI-powered agents can transform how institutional data is accessed and utilized

Supports data-informed culture across campus

# Our Multi-Agent Ecosystem Approach



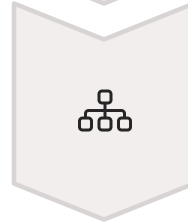
## Phase 1: Census Enrollment Agent

Interactive agent for enrollment data access



## Phase 2: Intent Agent

Intelligent routing of queries to specialized Data Sources



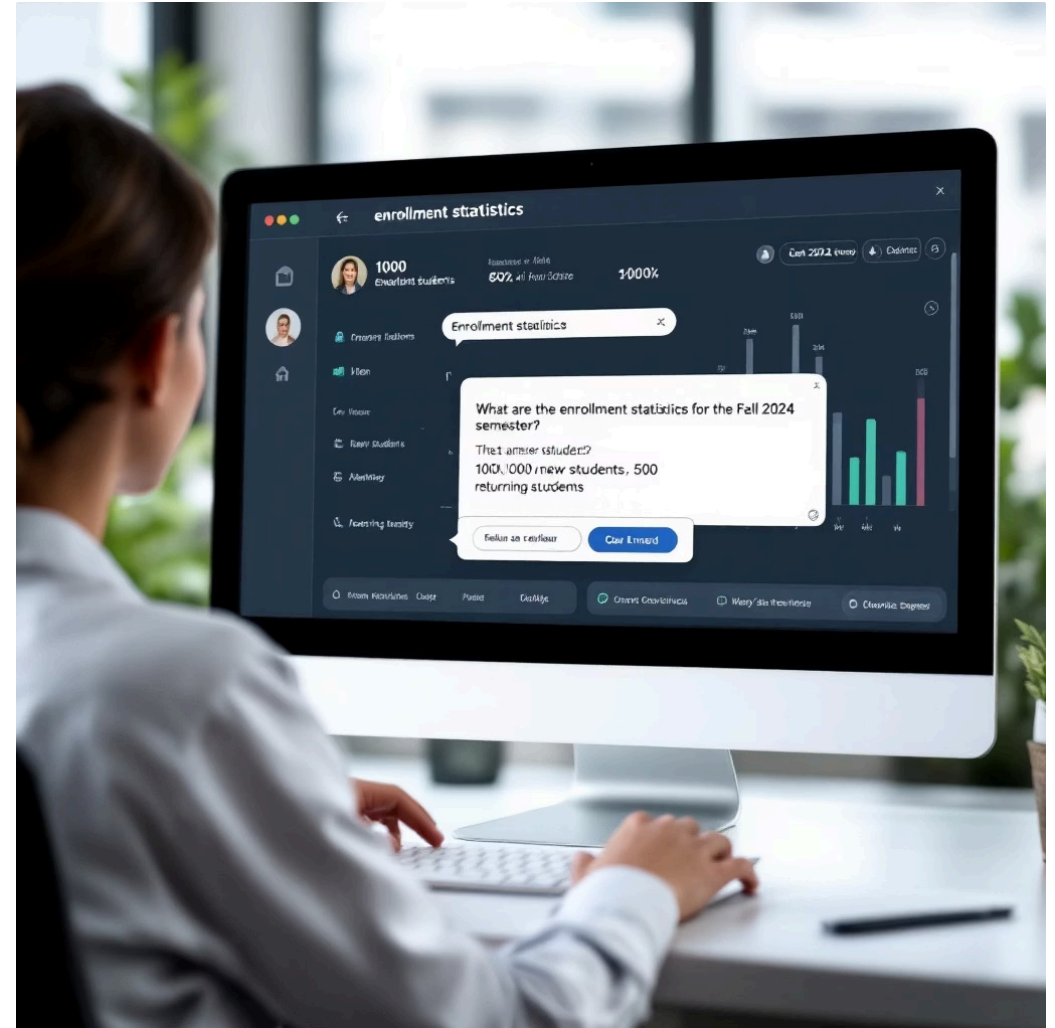
## Phase 3: Domain Expansion

Specialized agents for retention, graduation, HR, and more

# Phase 1 Spotlight: Census Enrollment Agent

## Key Features

- Natural language interface for enrollment queries
- Real-time access to current and historical census data
- Visualization capabilities for trend analysis
- Role-based security and data governance



The Census Agent provides conversational access to enrollment data, eliminating the need for complex database queries or waiting for reports.

# Enhanced Efficiency and Accuracy in Data Retrieval

## Reduced Retrieval Time

It shortens the data retrieval process by allowing us to fetch the information directly, instead of navigating through multiple systems and applying various filters.

## Automated Data Requests

Automate 80% of common data requests, freeing up human analysts for more complex tasks.

## Minimized Human Error

Minimize human error in data compilation by 95% through automated processes, ensuring data integrity.

## Increased Data Consistency

Increase data consistency across departments by providing a single source of truth for all institutional data.

# A Vision for Data-Driven Governance

## **Proactive Policy Adjustments**

Based on real-time demographic shifts and institutional insights.

## **Personalized User Services**

Delivered via integrated, data-informed platforms.

## **Significant Cost Savings**

Potential to save in operational efficiencies across agencies.

## **Enhanced Transparency & Trust**

Fostered through accessible, accurate data for all stakeholders.

# Census Enrollment Agent



Ro'bot Analyst

Welcome to Ro'bot Data Analyst! 🙌

Select a dataset and term to get started.

Census Enrollment

Select Term:

-- Select a term --

Start Chat

# Census Enrollment Agent



Ro'bot Analyst

Welcome to Ro'bot Data Analyst! 🤖

Select a dataset and term to get started.

Census Enrollment

Select Term:

Spring 2025

Active Filter: Spring 2025

Start Chat


# Census Enrollment Agent

← Back to term selection

Spring 2025

**B** Set the context to Spring 2025.

07/18/2025 06:42 PM ✎ 🗑

 Thank you for specifying the context. All further analyses and answers will focus on data related to Spring 2025. If you have any specific questions or analyses you'd like to explore for this term, please let me know!  
Is this useful? 👍 🗑

↺ Reset

**B** Enter your question



# Census Enrollment Agent



Ro'bot Analyst

← Back to term selection

Spring 2025



Context has been set to Spring 2025. Please let me know what specific questions or analyses you would like to explore regarding the Census Enrollment dataset for this term!

Is this useful?

B

Number of students enrolled

07/18/2025 06:28 PM



Show the number of students enrolled in Spring 2025.

Total Count Adtype



count Adtype

Academic Period Desc = 'spring 2025'

**19.91K**

Reset

B

Enter your question



# Census Enrollment Agent

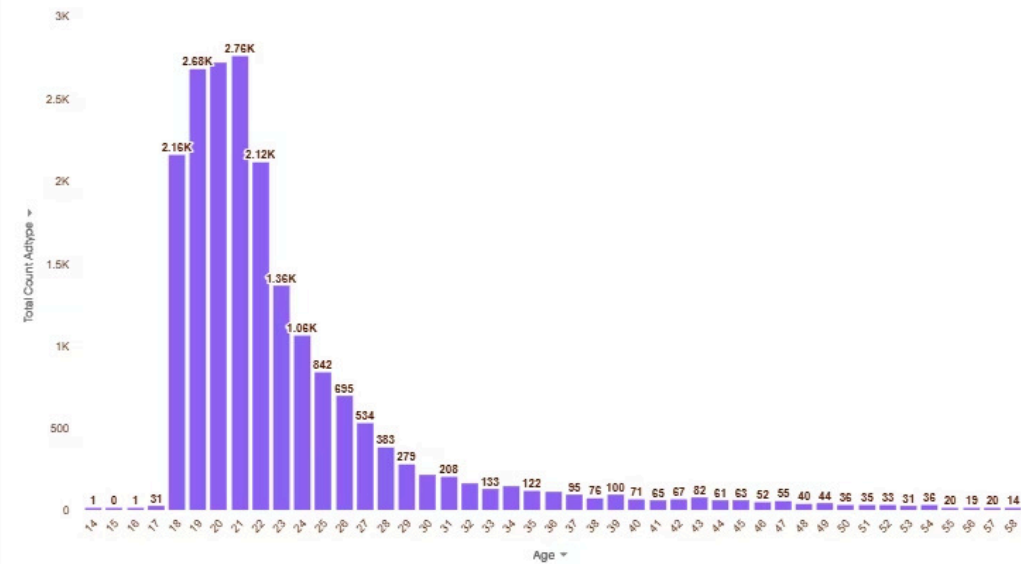
← Back to term selection

Spring 2025

Show the number of students enrolled in Spring 2025 by age.

Total Count Adtype by Age

count Adtype Age Academic Period Desc - 'spring 2025'



Download

Is this useful?

Reset

Enter your question



# Census Enrollment Agent

[← Back to term selection](#)

Spring 2025

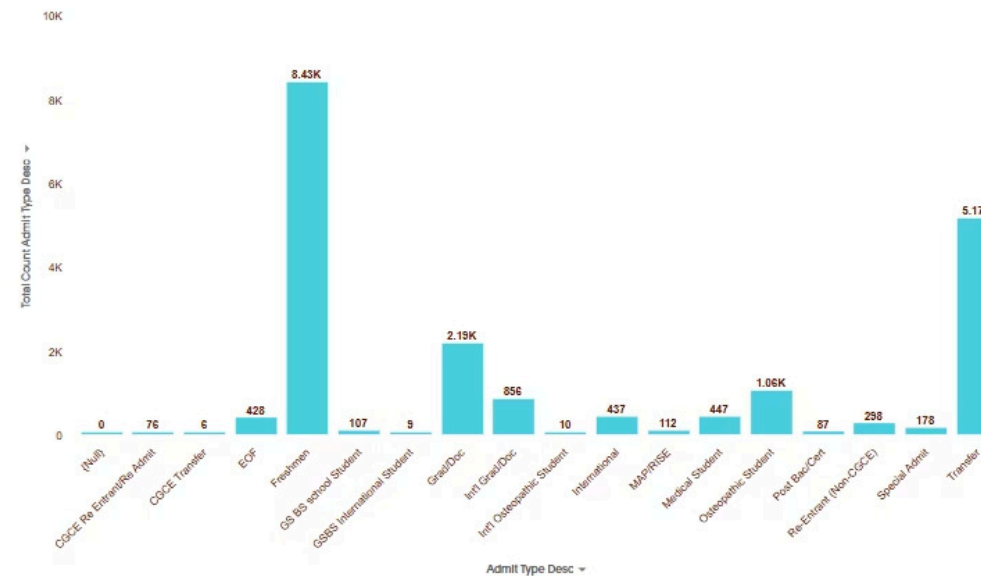
show counts by Admit type

07/18/2025 06:43 PM

Show the counts of students by Admit Type for Spring 2025.

Total Count Admit Type Desc by Admit Type Desc

count Admit Type Desc Admit Type Desc Term Desc - 'spring 2025'



Reset

Enter your question



# How It Works: Data Agent Workflow



## Natural Language Input

Users pose questions in everyday language.



## SQL Translation

The agent converts queries into precise SQL commands.



## Oracle Database Interaction

SQL queries are executed against the Oracle database.



## Data Retrieval & Formatting

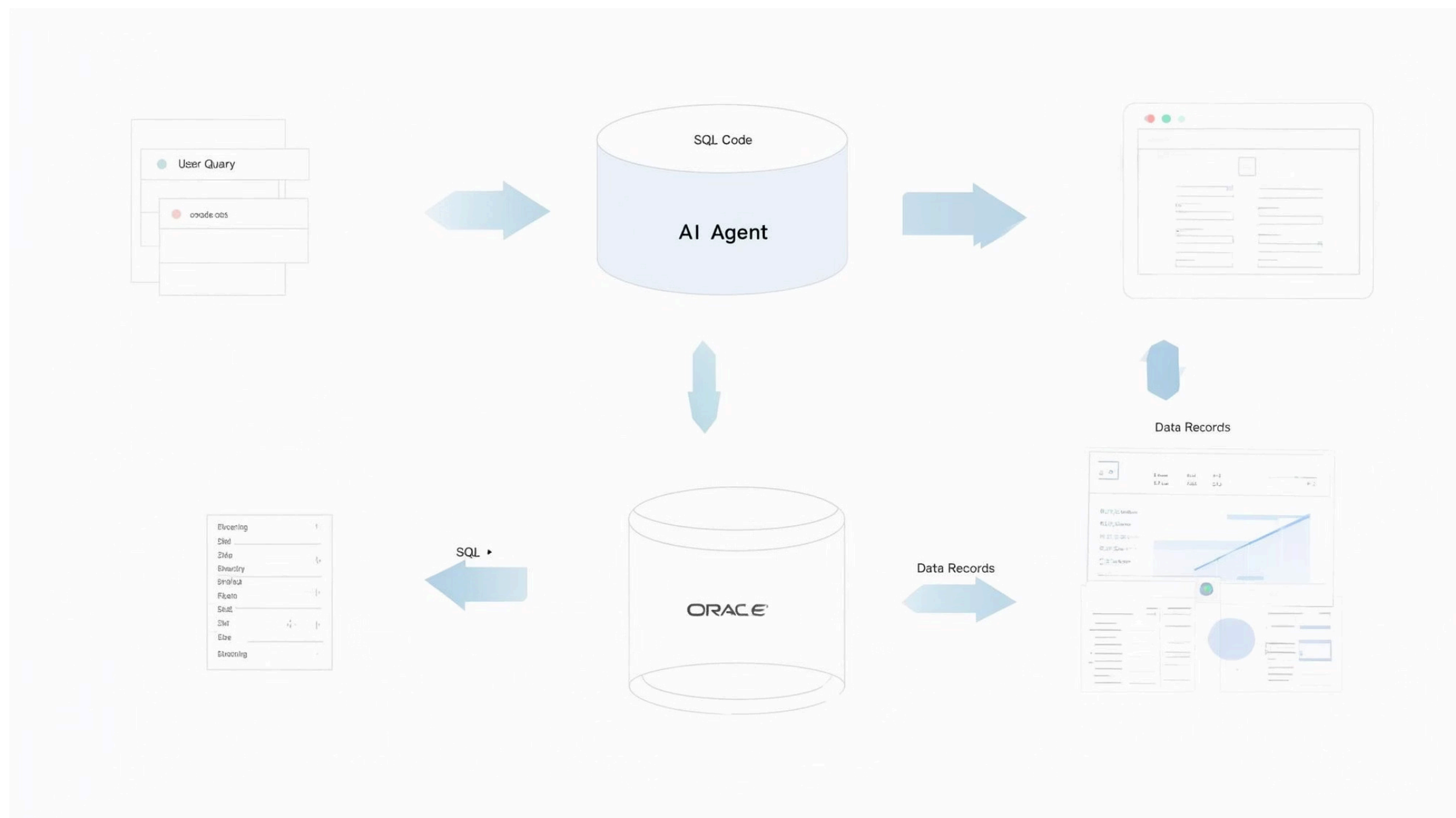
Results are fetched and prepared as tables or charts.



## Interactive Display

Information is presented intuitively for immediate insight.

This automated flow democratizes data access, transforming complex database interactions into simple, conversational queries, enabling users to gain insights without technical expertise.



# Expanding the Ecosystem: Future Agents



## Graduation Analytics

Predictive insights on completion rates, time-to-degree, and post-graduation outcomes



## Retention Agent

Early warning systems and intervention tracking for at-risk students



## Financial Aid Agent

Analysis of aid effectiveness, unmet need, and packaging strategies



## HR Analytics

Faculty workload, compensation equity, and hiring pipeline insights



## Admissions Office

Insights on applicant pipelines, recruitment effectiveness, and yield rates



## Academic Departments

Data on course enrollments, program effectiveness, and faculty teaching loads



## Institutional Research

Advanced analytics for strategic planning, reporting, and accreditation



## Student Affairs

Understanding student engagement, well-being, and support service utilization

# Sample Use cases

## Academic Planning

"How has the enrollment in STEM majors changed over the past five years by demographic group?"

The agent provides trend analysis with interactive visualizations, helping deans make informed decisions about program development.

## Academic Departments

- View enrollment by major/minor and class level
- Track course fill rates and section demand
- Plan faculty loads based on projected enrollment
- Understand historical trends to guide curriculum planning
- Track program growth/shrinkage
- Support curriculum planning

# Retention & Graduation

"How do retention rates compare across different student populations?"

The agent identifies gaps and tracks the impact of interventions on student success.

# Admissions Office

- Track daily and weekly admit counts
- Compare current cycle to previous years
- Analyze yield rates by major or region
- Identify missing documents or pending decisions
- Analyze trends in applications & yield
- Identify top feeder schools
- Compare year-over-year applicant pools

# Institutional Research

- Generate enrollment dashboards via chat
- Compare census snapshots across years
- Disaggregate enrollment by demography
- Assist in official reporting and benchmarking
- Simplifies recurring data requests
- Enables faster responses to leadership
- Reduces dependence on manual reports

# Student Affairs & Advising

- Identify student population by demographic groups
- Track full-time vs part-time distribution
- Monitor trends in probation or retention indicators
- Provide data for advising caseload planning

# Finance & Budget Office

- Estimate tuition revenue based on enrolled headcount
- Segment enrollment by residency and fee type
- Answer ad-hoc financial data queries without waiting
- Compare scholarship impact on yield
- Forecast aid needs with historical data

# Implementation Roadmap

## Q1: Foundation

1

- Data governance framework
- Knowledge base development
- Security protocols

2

## Q2: Census Agent Launch

- Beta testing with IR office
- User training program
- Limited deployment

## Q3: Expansion

3

- Intent agent development
- Campus-wide rollout
- Feedback collection

4

## Q4: Domain Growth

- Retention agent launch
- Graduation analytics
- Assessment framework

# Challenges

- Data governance framework
- Knowledge base development
- Security protocols

- Intent agent development
- Campus-wide rollout
- Feedback collection

## Q1: Foundation

1

2

## Q2: Census Agent Launch

- Beta testing with IR office
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## Q3: Expansion

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4

## Q4: Domain Growth

- Retention agent launch
- Graduation analytics
- Assessment framework

# Next Steps to Transform Your Data Culture

## Identify Pilot Group

Select key stakeholders for initial implementation and feedback

## Data Readiness Assessment

Evaluate current systems and integration requirements

## Implementation Workshop

Schedule a session to develop your institution's roadmap



Partner with our team to develop a customized implementation strategy that addresses your institution's unique data needs and culture.

