

# Project Iris - Stevens AI and BI Software

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## 1. Executive Summary (What the system does)

Project Iris is an AI-powered enrollment analytics and intelligence platform built for Stevens CPE. It unifies Slate funnel data and Census headcount data into a single dashboard, and adds a conversational AI assistant for natural language exploration.

### Key Capabilities

- Enrollment funnel analytics : Applications -> Admits -> Offers Accepted -> Enrollments
- NTR tracking : Goal progress, category and degree breakdowns, gap to goal
- Program intelligence : Heatmaps, top programs, YoY trends, comparisons
- Corporate cohorts : Partner headcount, distribution, and top cohort tracking
- Historical YoY : 3-year trends, conversion/yield trends over time
- Ask Navs AI assistant : Page-aware chat available as a floating widget and a dedicated page

## 2. System Architecture Overview (High level)

Aligned with Section 3 of `AI\_SYSTEMS\_TECHNICAL\_DOSSIER.md`.

At a high level, the platform has four layers:

- Ingestion : Slate API + Census sources (including snapshot files)
- Analytics : Funnel metrics, program stats, NTR calculation, cohort summaries
- AI layer : Gemini-powered assistant grounded with structured context and guardrails
- UI : Streamlit pages plus an always-available floating chat assistant

## 3. Data Engineering Pipeline (Ingestion + snapshots + caching)

Aligned with Section 4 of `AI\_SYSTEMS\_TECHNICAL\_DOSSIER.md`.

## Data Sources

- Slate CRM : Application funnel data via API or snapshot
- Census : Headcount and credit-based attributes (used for continuing/returning and NTR)

## Snapshot-first design

The app prioritizes `data/snapshots/` so local and cloud deployments are deterministic and do not depend on local file paths.

## Caching and refresh

Data is cached to avoid repeated fetch and heavy processing, with explicit refresh controls and a periodic refresh window.

## 4. Analytics Layer (Funnel, yield, NTR, cohorts, YoY)

Aligned with Section 5 of `AI\_SYSTEMS\_TECHNICAL\_DOSSIER.md`.

### Core metrics

- Admit rate : admits / applications
- Yield rate : enrollments / admits
- Offer accept rate : offers accepted / admits
- YoY change : percent change vs prior year

### NTR model

NTR is calculated using census attributes and credit load, producing:

- Total NTR and progress to goal
- New vs continuing components
- Category and degree breakdowns (where available)

## 5. AI Assistant System (Ask Navs, persona: Naveen)

Aligned with Section 6 of `AI\_SYSTEMS\_TECHNICAL\_DOSSIER.md`.

### Naming and roles

- Ask Navs : The feature name and tab label
- Naveen : The assistant persona inside Ask Navs

### How it works (high level)

- Uses Google Gemini as the LLM
- Uses structured, data-grounded context with guardrails to avoid fabrication

- Uses a two-stage approach: first select relevant context categories, then build the final context and answer
- Maintains conversation memory via summarization

## 6. UI Walkthrough (Screenshots by page)

### 6.1 Executive Summary

The screenshot shows the 'Executive Summary' page of the College of Professional Education at Stevens Institute of Technology. The top navigation bar includes links to 'Executive Summary', 'Enrollment Funnel', 'NTR Tracker', 'Program Intelligence', and '3 more'. There are also 'Stop', 'Share', and other user interface icons.

**Executive Summary**

**AI Insights**

Enrollments up 24% YoY with 381 new students. NTR at 82% of \$9.8M goal. CPE has only 18% yield despite 145 applications

**Enrollment Funnel (Spring 2026)**

APPLICATIONS	ADmits	ENROLLMENTS
<b>878</b> +32% vs 2025	<b>798</b> +49% vs 2025	<b>381</b> +24% vs 2025

**Headcount Breakdown (Spring 2026)**

NEW (SLATE)	CONTINUING (CENSUS)	RETURNING (CENSUS)
<b>381</b>	<b>1,087</b>	<b>56</b>

**Enrollment Funnel (2026)**

By Application Category

Message Naveen  
Press Enter to submit form

Send

Applications 878 100%

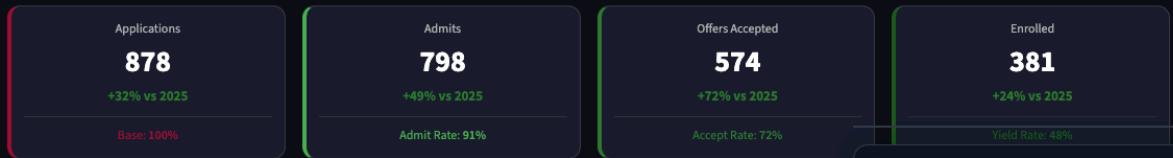
Stevens Online (Corporate)

The page features a floating 'Ask Navs' widget in the top right corner. A message is shown: 'tell me what are top yield performers'. Below it, a response is pending: 'Thinking...'. The overall design is dark-themed with red and white highlights for key data points.

- AI Insights : A concise, data-grounded narrative of the current state
- Funnel KPIs : Applications, admits, enrollments, and yield with YoY context
- Headcount Breakdown : New (Slate) plus continuing and returning (Census)
- Ask Navs widget : Floating assistant for quick questions without leaving the page

### 6.2 Enrollment Funnel

## Enrollment Funnel

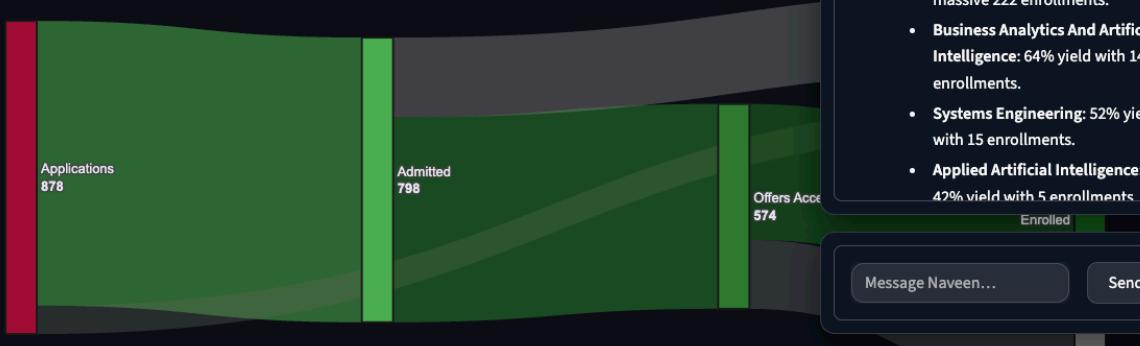


Ask Navs X

### Complete Enrollment Flow (Spring 2026)

▼ Click to Expand & See Category Breakdowns

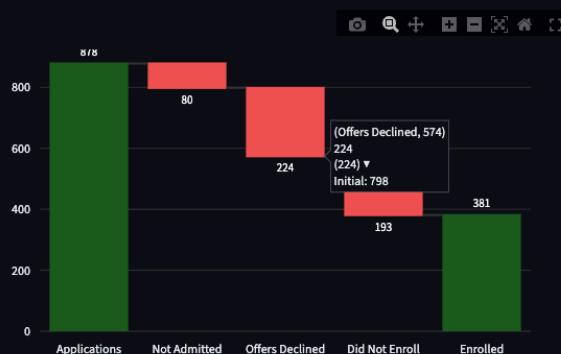
Hover over flows to see conversion rates. Green = progression, Gray = drop-off.



- Stage cards : Applications, admits, offers accepted, enrolled
- Sankey flow : Visual progression and drop-off through the funnel
- Expandable category breakouts : Drill down by category when expanded

## Conversion Waterfall

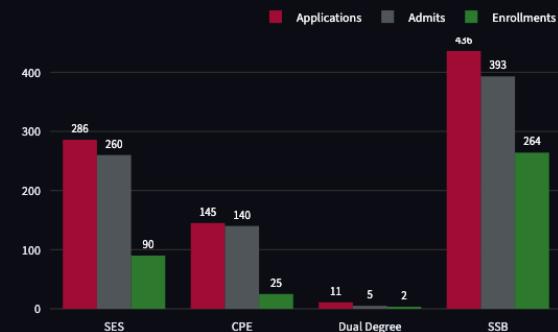
Student loss at each stage



## Year-over-Year

Year	Applications	Admits	Offers Accepted	Enrolled	Admit Rate	Yield Rate
2024	365	311	191	102	85%	33%
2025	667	534	334	308	80%	58%
2026	878	798	574	381	91%	48%
YoY	+32%	+49%	+72%	+24%	—	—

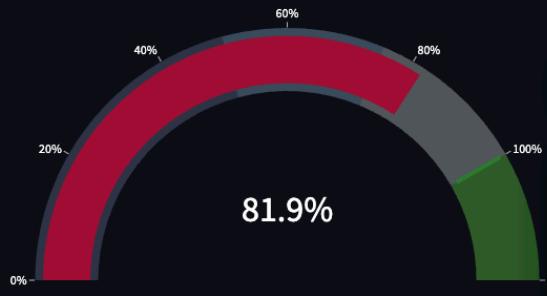
## By School



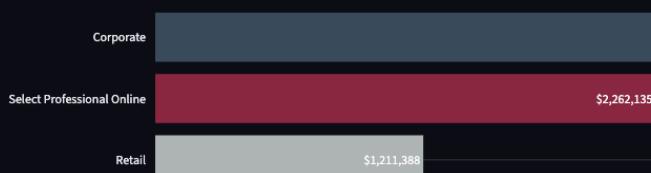
- Conversion waterfall : Where students drop at each stage
- YoY table : Quick comparison across 2024, 2025, 2026
- By school : Funnel volume by school

## 6.3 NTR Tracker

## NTR Tracker



### NTR by Category



Ask Navs

best levers for growing NTR ?

It is great to be working with you. I have analyzed the Spring 2026 data to identify the most effective levers for driving Net Tuition Revenue. Here are the actionable insights based on our current performance.

**NTR Data Limitations**

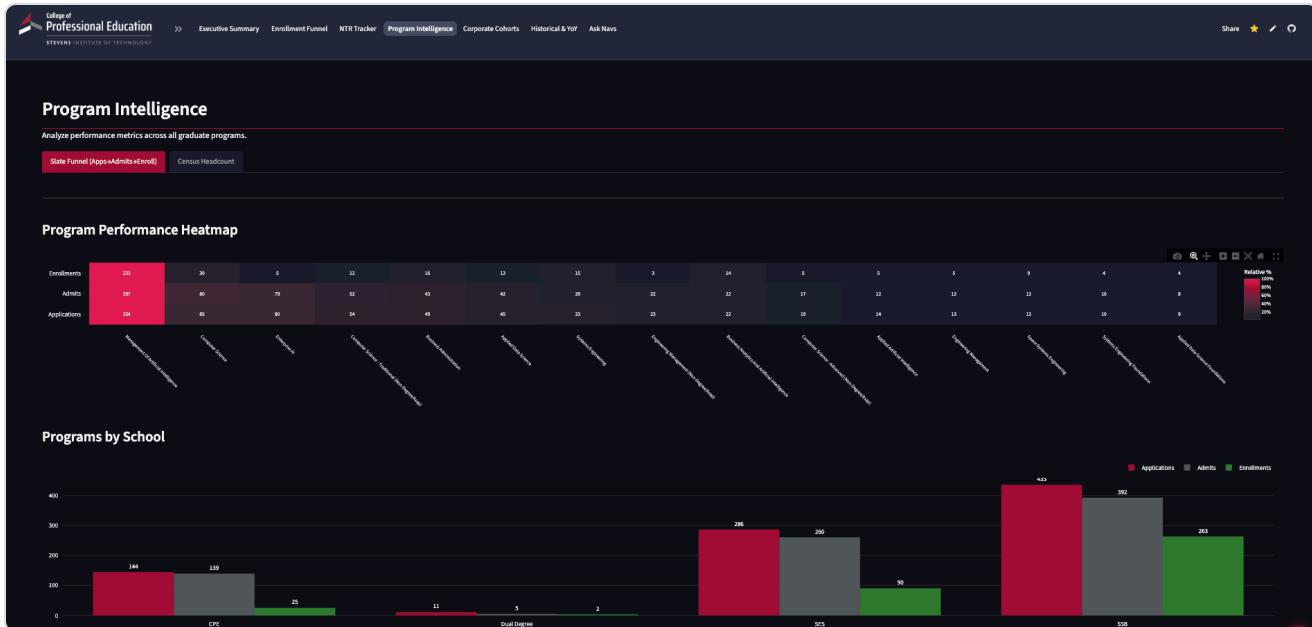
- Program-level NTR data is

Message Naveen Press Enter to submit form

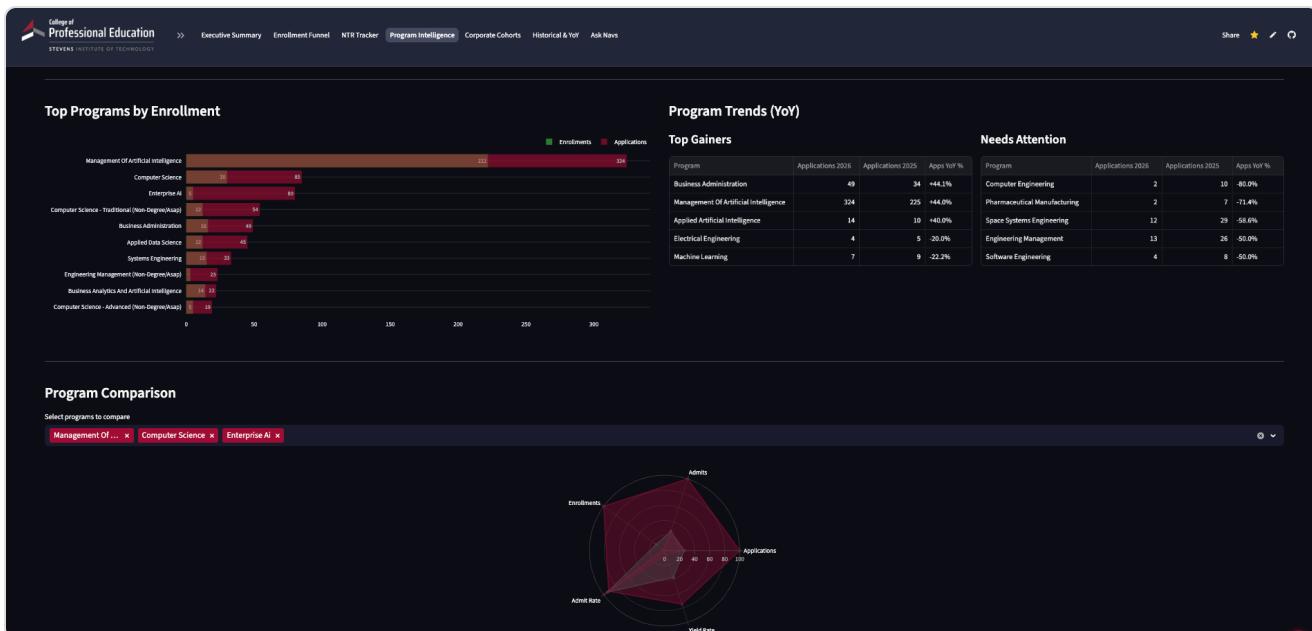
Send

- Goal tracking : Total NTR, goal, progress percentage, gap to goal
- Category breakdown : NTR composition across enrollment categories
- Ask Navs : Ask for levers and action plan grounded in the current data

## 6.4 Program Intelligence



- Heatmap : Program performance across apps, admits, enrollments
- Programs by school : Distribution across schools



- Top programs : Highest enrollment contributors
- Top gainers / needs attention : YoY deltas for quick prioritization
- Program comparison : Radar chart for side-by-side analysis

College of Professional Education STEVENS INSTITUTE OF TECHNOLOGY

Executive Summary Enrollment Funnel NTR Tracker Program Intelligence Corporate Cohorts Historical & YoY Ask Navs Share ⚡ 🎯

All Programs

Filter by School: All

Filter by Degree Type: All

Sort by: Applications 2026

Program	School	Degree Type	Applications 2026	Admits 2026	Enrollments 2026	Admit Rate 2026	Yield Rate 2026	Appn. YoY %
Enterprise AI	CPE	Professional Graduate Certificate	80	79	5	98.8%	6.3%	0.0%
Computer Science - Traditional (Non-Degree/Asap)	SES	Masters	54	52	12	96.3%	23.1%	0.0%
Business Administration	SSB	Masters	49	43	16	87.8%	37.2%	+44.1%
Applied Data Science	CPE	Masters	45	42	12	93.3%	28.6%	0.0%
Systems Engineering	SES	Masters	33	29	15	87.9%	51.7%	-36.5%
Engineering Management (Non-Degree/Asap)	SES	Masters	23	22	3	95.7%	13.6%	0.0%
Business Analytics And Artificial Intelligence	SSB	Masters	22	22	14	100.0%	63.6%	0.0%
Computer Science - Advanced (Non-Degree/Asap)	SES	Masters	19	17	5	89.5%	29.4%	0.0%
Applied Artificial Intelligence	SES	Masters	14	12	5	85.7%	41.7%	+40.0%
Engineering Management	SES	Masters	13	12	5	92.3%	41.7%	-50.0%
Space Systems Engineering	SES	Masters	12	12	9	100.0%	75.0%	-58.6%
Systems Engineering Foundations	CPE	Professional Graduate Certificate	10	10	4	100.0%	40.0%	0.0%
Applied Data Science Foundations	CPE	Professional Graduate Certificate	9	8	4	88.9%	50.0%	0.0%

- Filters : School and degree type
- Sort and scan : Applications, admits, enrollments, yield, YoY

## 6.5 Corporate Cohorts

College of Professional Education STEVENS INSTITUTE OF TECHNOLOGY

Executive Summary Enrollment Funnel NTR Tracker Program Intelligence Corporate Cohorts Historical & YoY Ask Navs Share ⚡ 🎯

CORPORATE PARTNERS

**31**

CORPORATE ENROLLMENTS

**1,063**

CORPORATE APPLICATIONS

**N/A**

**Top Corporate Cohorts**

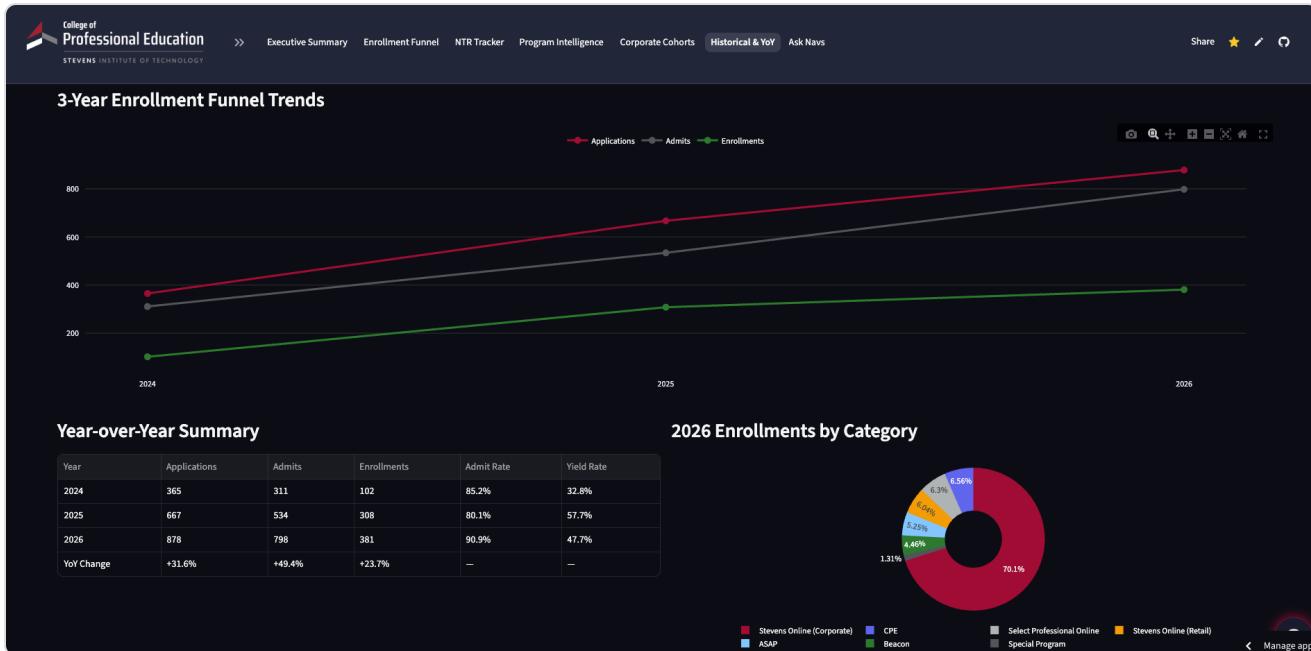
Corporate Cohort	Count
Pfizer (Cohort)	587
NEW_Northrop-Grumman Aerospace Systems (Cohort)	92
NEW_Northrop-Grumman Mission Systems (Cohort)	69
L3Harris Technologies (25% Cohort)	43
EdAssist (15% EdA)	35
Navair	32
NEW_Northrop-Grumman Space Systems (Cohort)	28
Not reported	26
NEW_Northrop-Grumman (EdAssist)	4
Newport (Cohort)	4

**Enrollment Distribution**

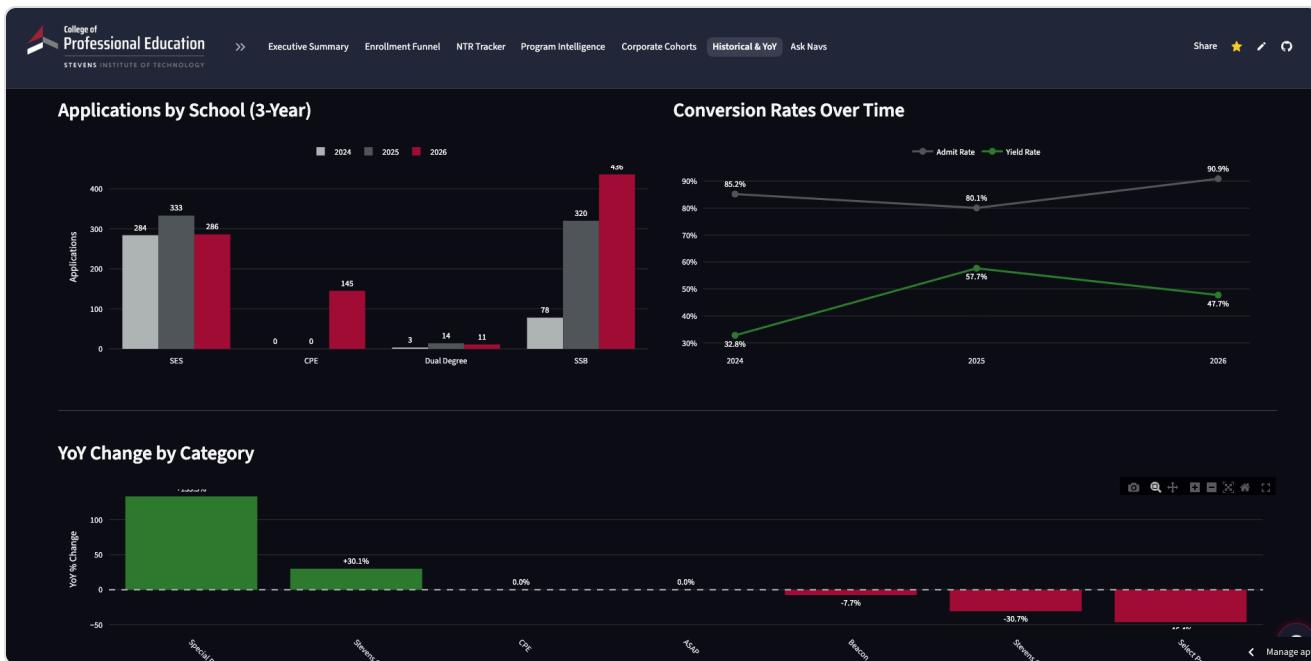
Cohort	Percentage
Pfizer (Cohort)	55.2%
Other	14.2%
NEW_Northrop-Grumman Aerospace Systems (Cohort)	8.65%
NEW_Northrop-Grumman Mission Systems (Cohort)	6.49%
L3Harris Technologies (25% Cohort)	4.05%
EdAssist (15% EdA)	3.29%
Navair	3.01%
NEW_Northrop-Grumman Space Systems (Cohort)	2.63%
Not reported	1.46%

- Corporate partner view : Partners, enrollments, distribution
- Top cohorts : Who is driving corporate headcount

## 6.6 Historical and YoY



- 3-year trends : Applications, admits, enrollments
- YoY summary : Table view for quick reference
- Category mix : 2026 enrollment distribution by category



- School trend : Applications by school across 3 years
- Conversion rates over time : Admit rate and yield rate trends
- YoY change by category : Where growth and decline is concentrated

## 6.7 Ask Navs (Dedicated AI page)

 **Ask Navs**  
Naveen • Ask about enrollment, yield, NTR, and trends.

 New Chat

 What's driving enrollment growth?

 Hey there! Great to see you. We have some solid momentum heading into Spring 2026. The 24% year over year growth in enrollments is a massive win for the team. Here is the breakdown of what is fueling that engine.

**Corporate Channel Dominance**

- Stevens Online (Corporate) is the primary engine behind our growth.
- This category delivered 267 enrollments with an impressive 73% yield rate.
- It represents the largest share of our 381 new enrollments by a significant margin.

**AI Program Momentum**

- Management Of Artificial Intelligence is our standout performer.
- This program alone brought in 222 enrollments and maintained a high 75% yield.
- Other AI-focused tracks like Business Analytics And Artificial Intelligence are also showing strong efficiency with a 64% yield.

Ask about enrollment, yield, NTR, or trends... 

- Natural language analytics : Ask questions and get grounded answers
- Actionable breakdowns : Responses structured into short sections and bullets
- Consistent voice : Friendly and confident, but professional

## 7. Security and Deployment

Aligned with Sections 9 and 10 of `AI\_SYSTEMS\_TECHNICAL\_DOSSIER.md`.

### Security

- Password-protected access via Streamlit secrets
- API keys stored in secrets, not in code
- Aggregate analytics only (no student-level PII displayed in the UI)

January 2026.