The Future of Enrollment Management:

How Artificial Intelligence and Machine Learning Can Positively Impact Engineering Enrollment Outlooks

Prescriptive Analytics and Intelligent Names
May 18, 2022

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Presenters

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Andy Hannah

President

othot℠
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Adjunct Professor of Analytics, University of Pittsburgh
Senior Advisor and Faculty Member of the International Institute of Analytics
Board of Visitors, Katz Graduate School of Business, University of Pittsburgh
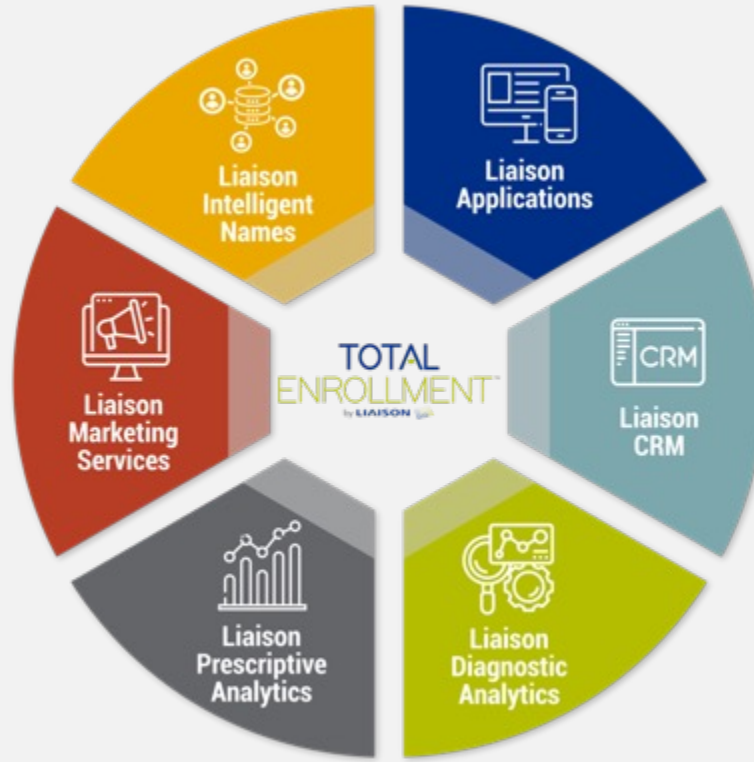
David Poole

Research Director

ENGINEERINGCAS™
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Your Ecosystem Approach to the Student Journey

The Top Ten Harness Data, AI, Analytics
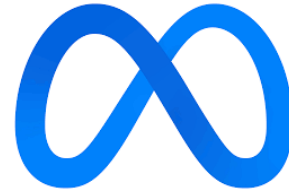
2000's Top Ten Did Not

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What is the Relevance to Higher Ed?

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Insights is the language of decision makers

The Emergence of AI and ML as Decision Drivers

VALUE

How can we make it happen?

What will happen?

Prescriptive Analytics

Why did it happen?

Predictive Analytics

What happened?

Diagnostic Analytics

Descriptive Analytics

Hindsight

Insight

Foresight

DIFFICULTY

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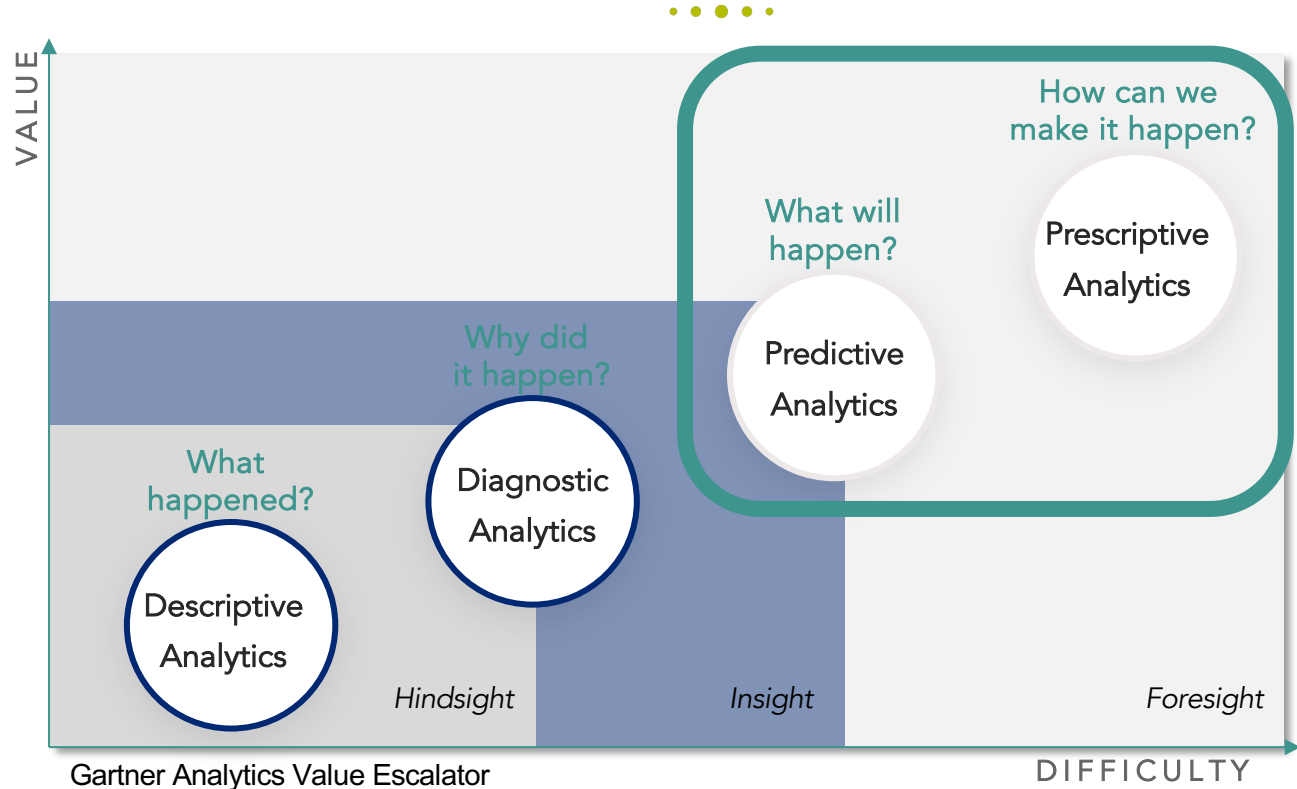
Gartner Analytics Value Escalator
www.gartner.com

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AI and ML Create Better Outcomes for Students and Institutions

Enrollment

Student Success

Post Graduate Success

Advancement

Recruiting
Admissions
Financial Aid

Retention
Persistence
through Degree

Placement
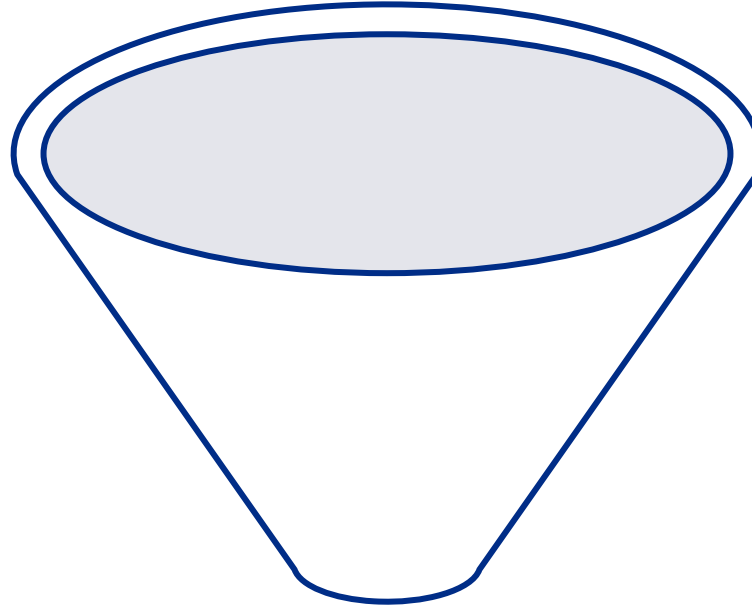Managing Debt

Fundraising
Volunteer
engagement
Returning Students

Predict Behavior and Prescribe Actions that Optimize Outcome

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We Face Myriad of Challenges

- Cliff
- Test Optional
- International?
- Stealth
- Value
- Outcomes
- Resources

Top of funnel contacts

Enrolled Students

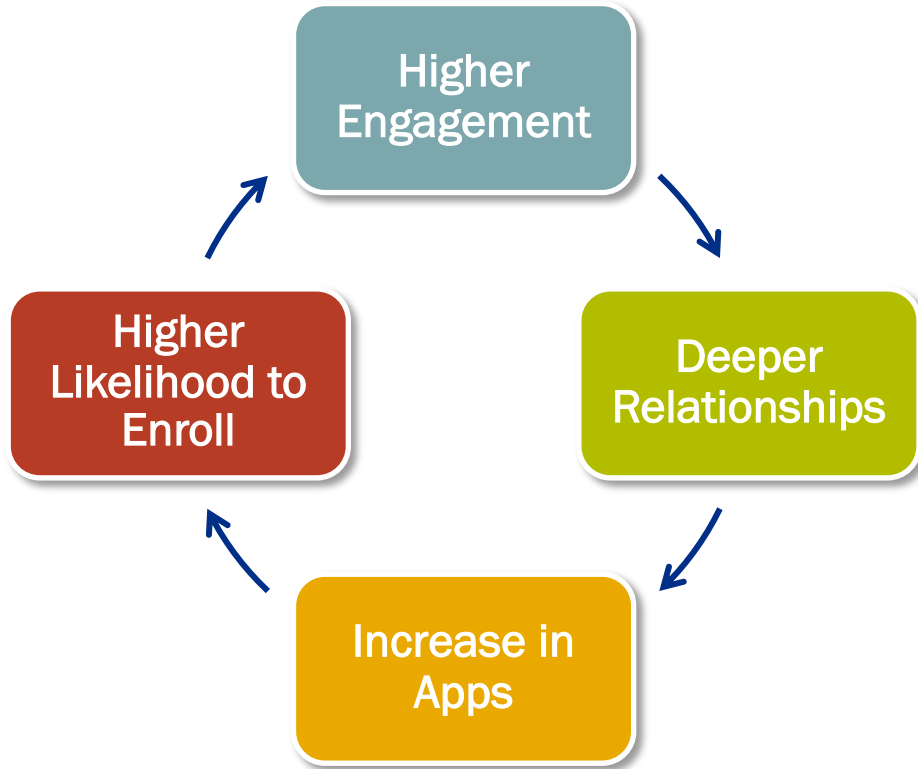LIAISON
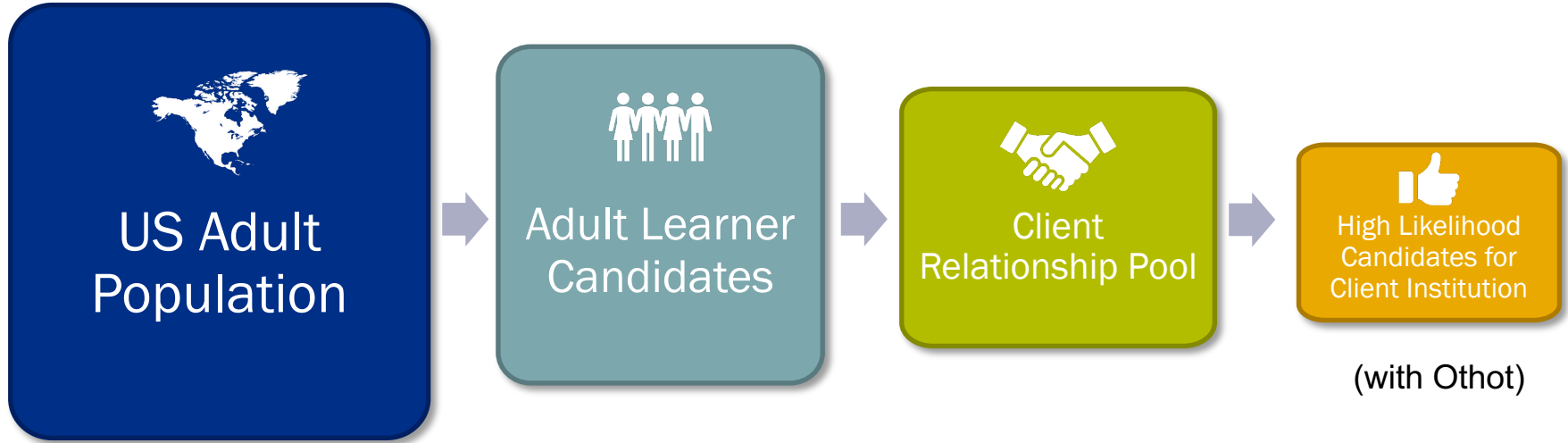
The Intelligent Funnel

Top of the Funnel Disruption

A customizable, cost-effective advanced analytics solution to start building relationships with the best adults for your institution

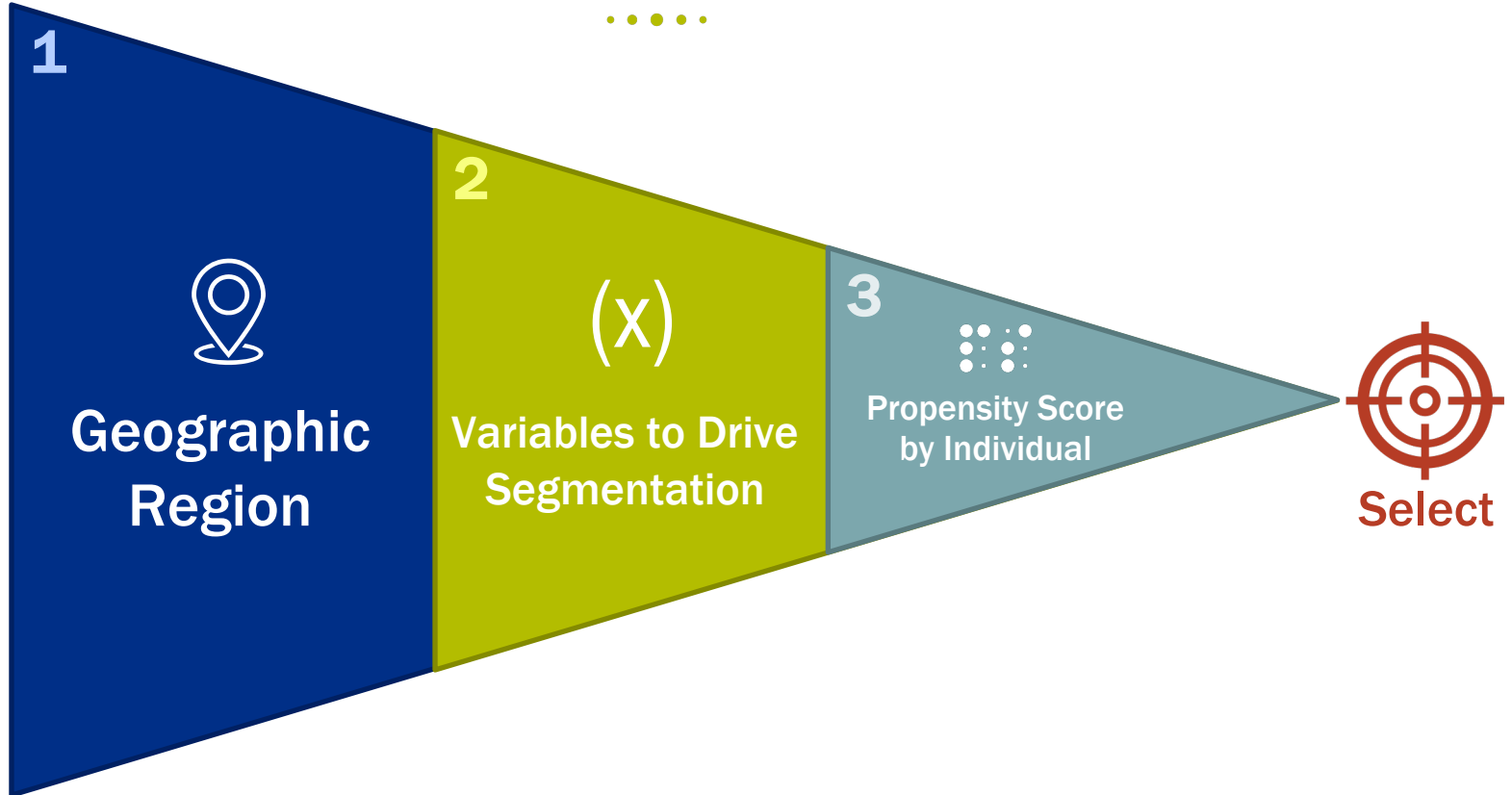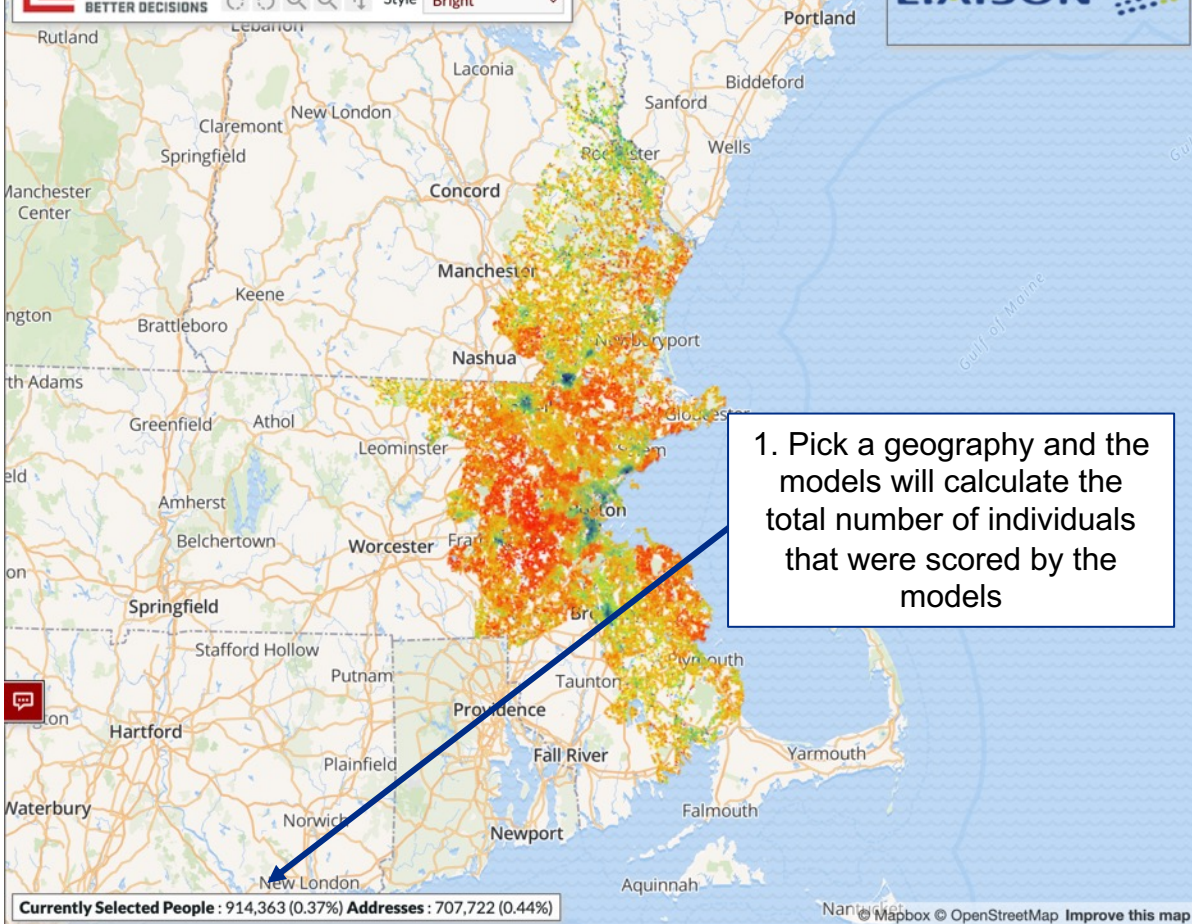**Custom curation** through subpopulations determined by you

Identify adults who have a **high propensity** to pursue education at YOUR institution

Intelligent Names

Match your marketing needs through **segmentation** and consultations

Enhances CAS, TargetX, Othot Prescriptive Analytics, EMP Marketing

Intelligent Names: Targeting the Segments and Individual

US Adult Population → Adult Learner Candidates → Client Relationship Pool → High Likelihood Candidates for Client Institution

(with Othot)

- Focused on *Individualism* – just because "you" look like someone doesn't mean you have the same academic ambitions

- Driven by "living analytics" – continuous updated as new data is available

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What if you could

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1 Geographic Region

2 (X) Variables to Drive Segmentation

3 Propensity Score by Individual

Select

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1. Pick a geography and the models will calculate the total number of individuals that were scored by the models

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2. Narrow the geography, start to segment population (degree in this case) and filter by propensity score

3. Further segment population (age in this case) and filter by desired variables

4. Further segment population (age in this case) and filter by desired variables (Gender and Religion here)

What happens next?

- School selects names
- They receive:
  - Email addresses (20% – 50% fill)
  - Mailing address for direct mail/loading into social media platform
  - Can work with L2 for social media campaigns (will be additional cost)
  - Cell phone number for text campaign (no additional cost)
- Work with EMP to develop marketing campaigns (case-by-case)

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Enrollment

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What is the outcome that you want?

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- ✓ **A better shaped class that thrives at your institution**

- ✓ **A reduction in staff/student time, effort, and cost**

What You Need:

- Improved understanding of <u>student behavior</u> (through data)

- <u>Personalization</u> (what will have the biggest impact on which students, and when?)

How It Works

Learn →

← Predict Behavior
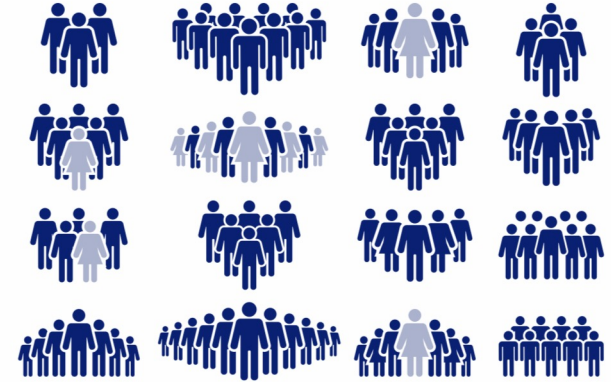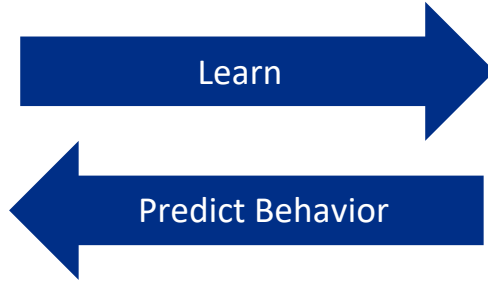
20% Likely

Prescribe →

80% Likely

ML Is the Pathway to A Better Shape

Likelihood Score Distribution

Number of Students

1,200
1,000
800
600
400
200

0 %   50 %   100 %

Likelihood of Enrollment
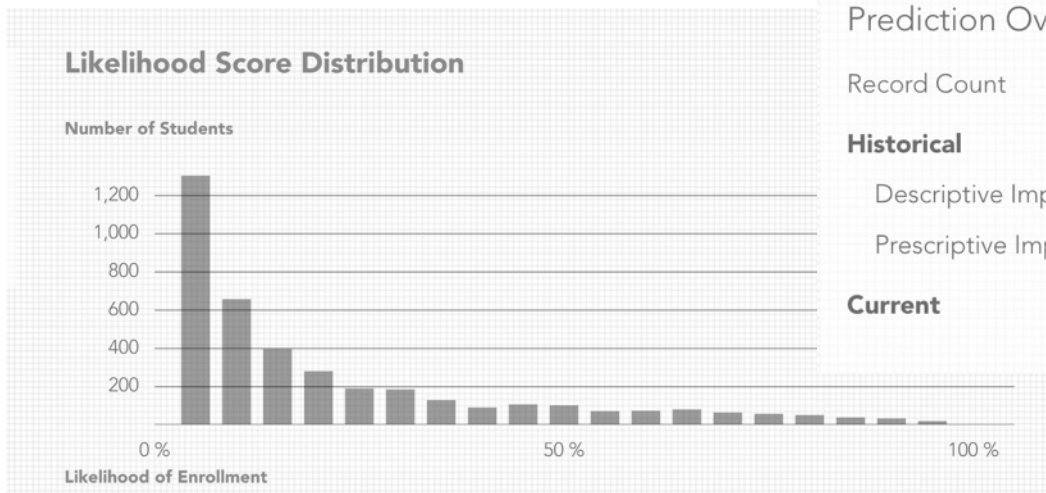
Prediction Overview

Record Count	3,979
Historical	**206**
Descriptive Impact	10
Prescriptive Impact*	0
Current	**216**

Focus on Individuals:

Geography

Diversity

Academic Attributes

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Explainable AI Increases Trust and Usability

Waterfall chart:

- 2021-2022 Historical: 1,324
- GRE Official Verbal Percentile: Min: 15
- Designation Program Start Term: Summer: 15
- GRE Official Verbal Converted: Mean: 14
- GRE General Official Overall Result: Min: 10
- Designation Program Type: Biostatistics: -11
- Current City: -11
- Application Status: Manual: -14
- Misc: -19
- Designation Program Level: Phd: -19
- Designation Delivery: Online: -24
- Designation Program Level: Mhs: -25
- Designation Program Level: Mph: -45
- Designation Program Level: Mas: -103
- 2021-2022 Current: 1,107

Legend: Increase | Decrease | Total

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Identify The Individual Actions To Maximize Yield

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ML Is The Pathway to Leverage

Additional $ Amount

Unique Id	0	0 - 2,000	2,000 - 5,000	5,000 -
4186791	2 %	4 %	4 %	4 %
4186816	0%	8 %	8 %	8 %
4186820	0 %	3 %	3 %	3 %
41868261	44 %	42 %	42 %	51 %
4186861	0 %	3 %	3 %	3 %
4186971	0%	8 %	8 %	8 %
41871401	7 %	23 %	31 %	39 %
4187237	4 %	11 %	11 %	11 %
41872371	28 %	34 %	34 %	34 %
4187264	2 %	12 %	12 %	12 %

% Tuition Met By All Aid Sensitivity

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University of Pittsburgh | School of Law
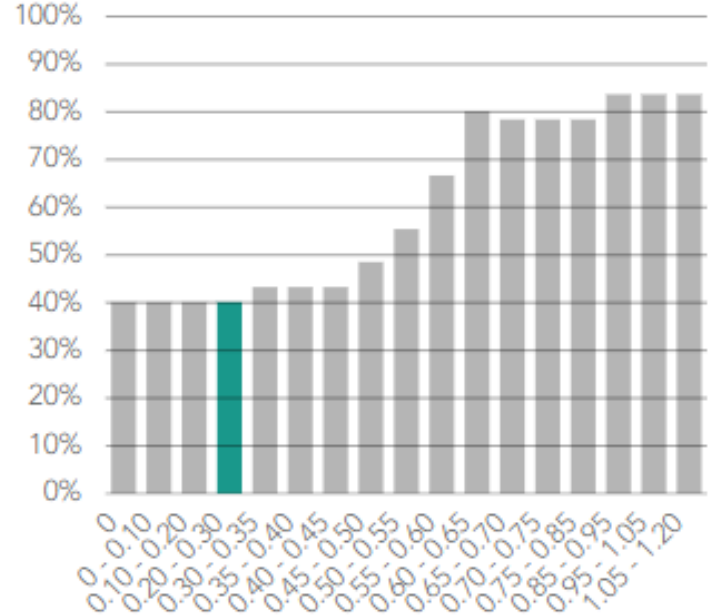
Using the platform, Pitt Law:

- ✓ Analyzed data by diversity

- ✓ Targeted more competitive candidates

- ✓ Expanded its prospect base

- ✓ Focused on increasing LSAT scores

Results:

- ✓ Increase diversity by **7%**

- ✓ Improve ave LSAT scores to goal of **160**

- ✓ Best admissions year yet in terms of scores, GPA, and gender-based demographics

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TEXAS TECH UNIVERSITY

Challenges:

✓ **Optimize marketing spend**

✓ **Find efficiencies in CRM**

Solutions:

- Used Othot platform predictions to understand factors that drive enrollment

- Optimized marketing and recruiting efforts to identify students most likely to enroll and increase recruiting event attendance more than 30%

- Utilized CRM for tracking student lifecycle and automating communications, triggers, etc.

Results:

- Exceeded goal by 322 students (9% growth in 3 years)

- Achieved opportunity to guide strategy for university five-year plan

Centralized Application Model

- Meet centralized admissions requirements while providing for unique program needs, including:
  - Program-specific applicant questions
  - Supplemental document uploads

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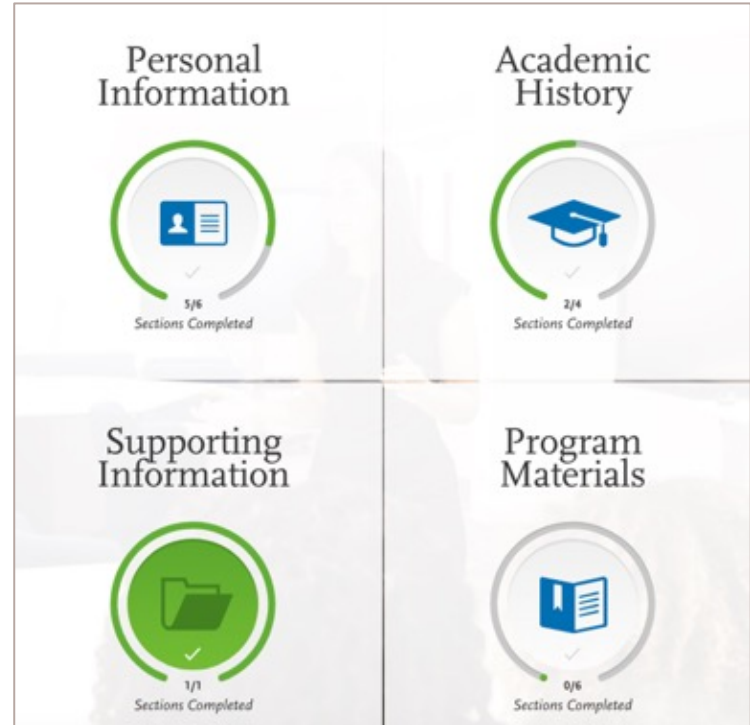
Finding the Best Fit Students

Intelligent Names

High Propensity to Enroll in Graduate Education

CENTRALIZED APPLICATION SERVICE | CAS™
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High Impact Names

High Propensity to Enroll at Your School

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Q & A

Upcoming Events

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Join us virtually:

Virtual Webinar

Engineering Educators Exchange

June 22 at 2:00 p.m. ET

Come see us in person:

slate INNOVATION FESTIVAL 2022

The Slate Innovation Summit

June 16-17 in Nashville

ASEE 2022 ANNUAL CONFERENCE
Excellence Through Diversity
MINNEAPOLIS, MINNESOTA, JUNE 26-29, 2022

The ASEE Annual Conference

June 26-29 in Minneapolis

Visit us in booth 823

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Thank You

Please take a moment to complete a brief one-question survey at the conclusion of this webinar.

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