Putting the AI in apprAIsal

Implementing AI tools in your Legal and Assessment Practice

IAAO ANNUAL LEGAL SEMINAR
NAVIGATING CHANGE

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Damian Lara

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Early Life & Inspiration

- Grew up working fields in eastern New Mexico
- Observed life quality disparities in neighboring communities

Education

- Bachelor's Degree: Political Science & Philosophy, Brown University
- Law Degree: University of New Mexico

Public Service

- Congressional Staffer: U.S. House of Representatives
- Deputy Assessor: Bernalillo County
- Leadership: Assessor's Affiliate of New Mexico Counties
- Deputy Director: Economic Development, City of Albuquerque

Legal Experience

- Represented immigrant victims of domestic violence
- Staff Attorney, NM Legislature
- Private Practice Attorney

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Hana Rhee

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Early Experiences & Inspiration

- Grew up in Korea and studied, worked, lived in 6 countries 4 continents
- Observed life quality disparities globally, especially in Korea, US, and South Africa

Education

- BA: Economics, Wellesley College (US)
- MA: Development Studies, University of Western Cape (South Africa)
- MBA: INSEAD (France & Singapore)

Expertise

- Economic Development (US & Africa)
- Strategy Consulting (Bain & Economic Development Consulting)
- Tech (AI/Enterprise Software)

Current Role

- Senior Director, State & Local (C3 AI)

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Mission and Vision Statements

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Mission Statement

"The Office of the Bernalillo County Assessor is committed to providing excellent customer service through outreaches and education, while ensuring that we strive to maintain fair and equitable practices valuing all properties."

Vision Statement

"The Assessor's Office strives to be a fair and equitable resource the public can count on."

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Challenges: Navigating & Embracing Change

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Current Call Center Staffing Challenges:

- 25% Vacancy Rate in the Office.
- 10 Agents available during business hours.
- 12 PM identified as a critical staffing issue due to reduced capacity.

Key Issues:

- Agents are unavailable after office hours and on weekends.
- Limited staffing during lunch hours (12 PM/1 PM), reducing efficiency.
- Efficiency drops to 50% at 12 PM, increases slightly to 60% by 1 PM.
- Agents are overloaded with Tier 1 queries, such as:
  - "What is my property tax amount?"
  - "How do I submit a form?"

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Challenges: Navigating & Embracing Change

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Data Retrieval for Call Center Metrics:

- Retrieving accurate call center metrics proved to be a challenge.
  - Detailed metrics could only go back as far as one year (August 2023).

The Challenge

- A.C.E was launched in the middle of January 2024. Our theory was that by launching the chatbot, there would be an impact on two key variables:
  1. Call Durations
  2. Call Volumes
- **Why Focus on these?**
  - Every routine question resolved by the chatbot is one less call for an agent to handle, reducing call center load.

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Why the need for AI?

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- Automates repetitive tasks, allowing agents to focus on complex, constituent-specific cases.
- Chatbots quickly resolve Tier 1 queries, ensuring constituents do not have to wait for an available agent.
- Minimizes human intervention in routine tasks, leading to cost savings.
- Offers real-time, tailored assistance for faster and more accurate responses to constituent queries.

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Implementation & Testing

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- A.C.E (Assessor's Community Educator) was launched on January 11th, 2024.
- The first month saw high volumes of constituent feedback, as expected with a new technology deployment.
- Queries have since leveled off, averaging around 2,000 per month.
- A.C.E. will become more effective as it integrates new AI models, incorporates additional data, and refines its persona to better respond to constituent queries.

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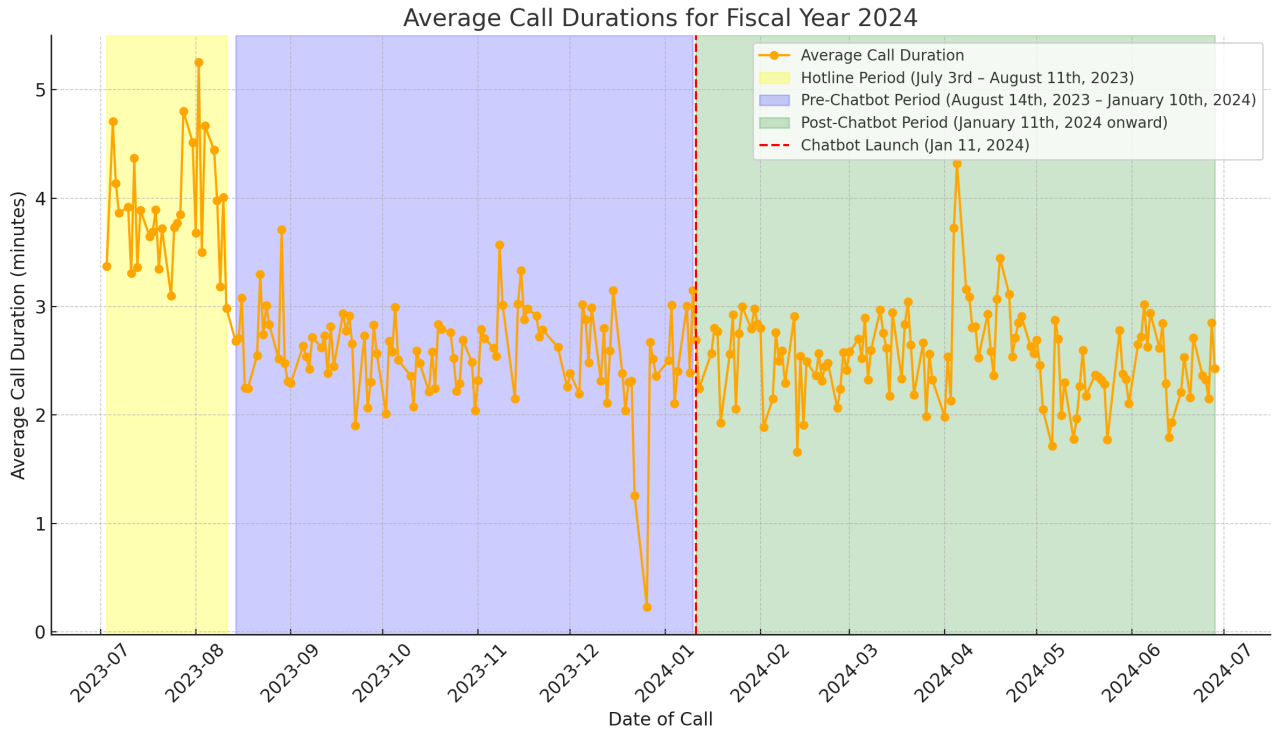
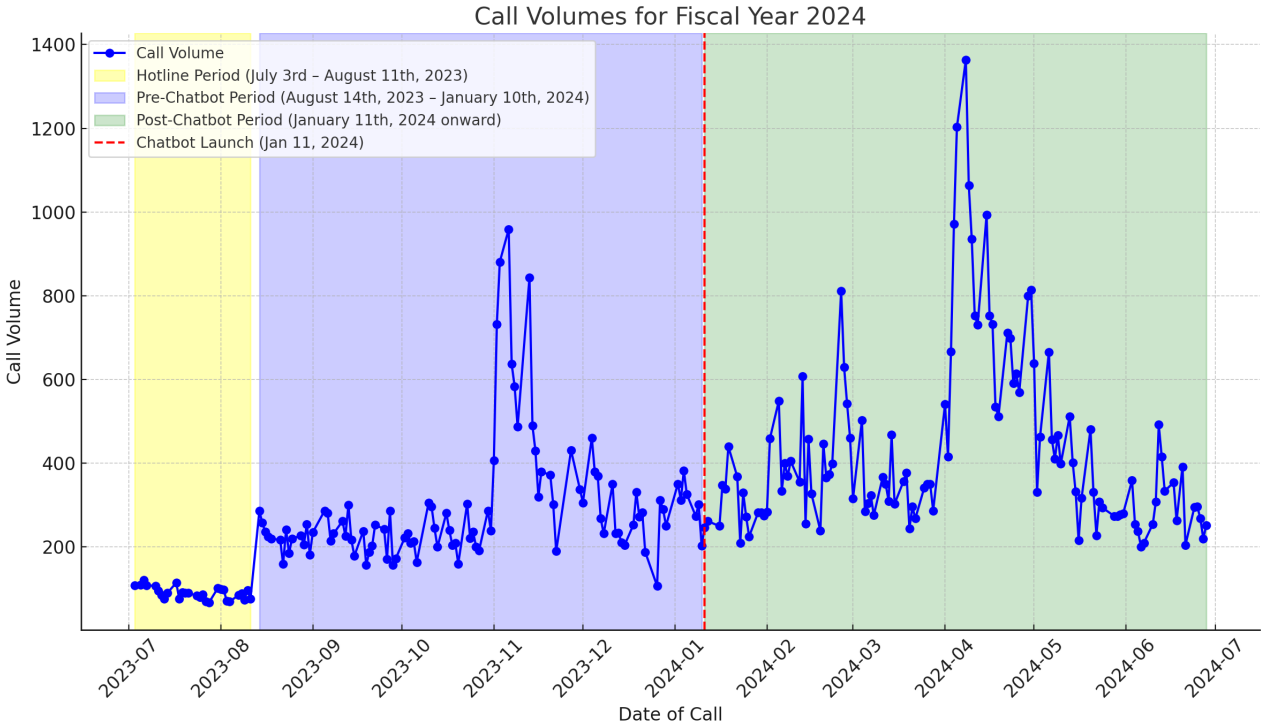
Results (Call Durations & Dropped Calls)





Results (Pre to Post Chatbot)

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Call Volume & Duration Interpretation

- **Hotline Period (July 3 - August 11, 2023):**
  - ~200 calls/day, longer calls (~4-5 mins).
  - Likely complex inquiries (e.g., livestock/manufactured home valuation).
- **Pre-Chatbot Period (August 14, 2023 - January 10, 2024):**
  - Rising calls, peaks in Nov/Dec (~1000 calls).
  - Shorter call durations (~2-3 mins), streamlined processes.
  - Spikes on key office dates: Tax Bill Mailed out (Nov 1), Constituents filing for a Refund (60 Days after 1st installment of property tax).
- **Post-Chatbot Period (January 11, 2024, onwards):**
  - Call reduction, durations stabilized (~2-3 mins).
  - Spikes on key office dates: Reporting Change in Classification (Month of February), Notice of Value (April 1st), Filing Protests (30 Days after the Notice of Value Mailing Date)

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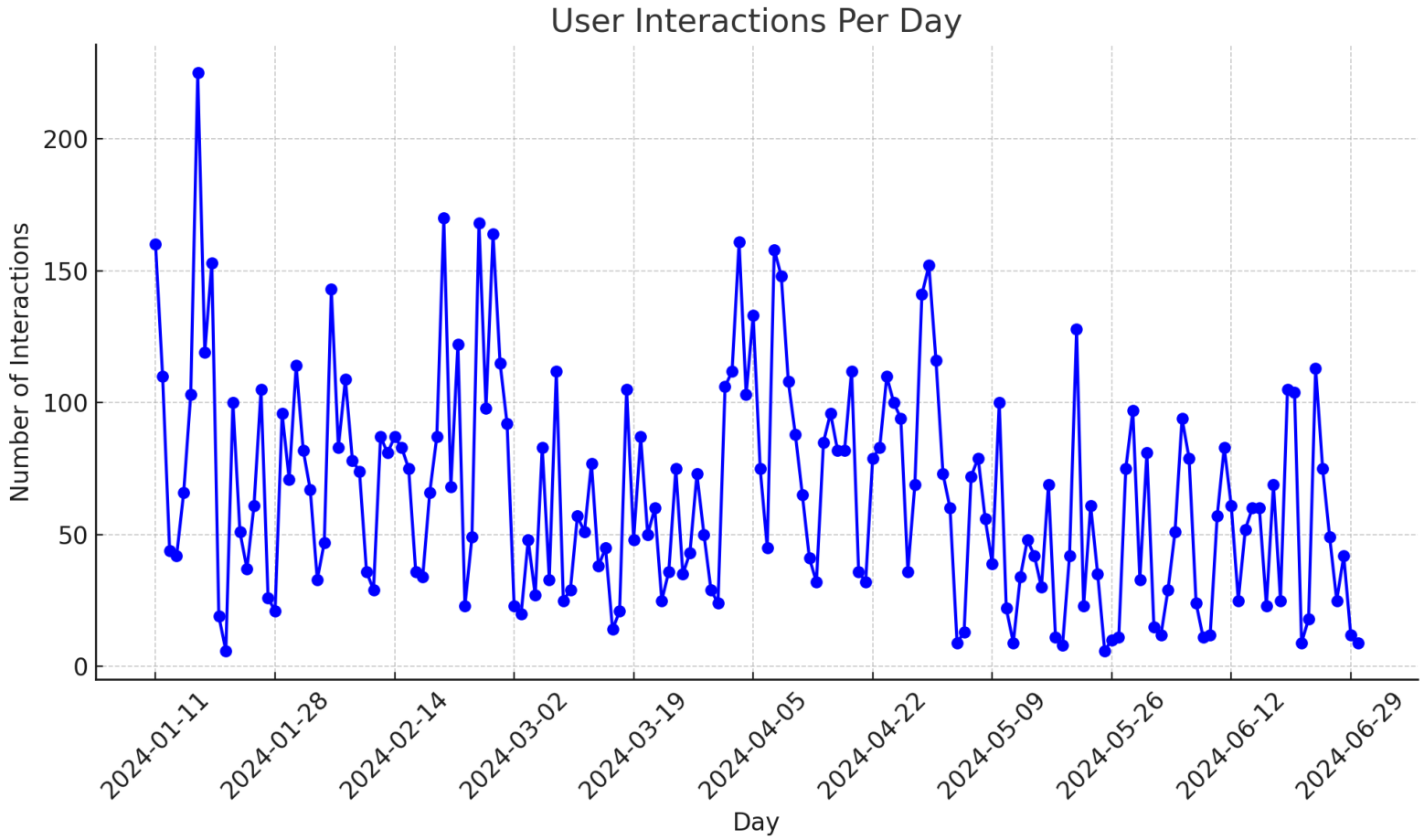
Results (User Interactions for Chatbot)



Results (User Trends)

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High Initial Activity (January 11 Chatbot Launch):

- Spike in interactions immediately after the chatbot launch.

Fluctuations:

- Daily interactions vary, with notable peaks during seasonal events such as:
  - Notice of Value mailings
  - Business Personal Property Reporting

Steady Decline:

- Gradual decrease in interactions from February through June, indicating that the initial surge leveled off over time.

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Testimonials

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"Answered my question and gave me directions to rectify my problem. Perfect." - Anonymous

"A.C.E was very helpful and knowledgeable. It pointed me in the right direction and was easy and fast to use. I really appreciate it." - Anonymous

"I love using the A.C.E Chatbot, especially when I am on the phone with a Property Owner. It helps me direct them to what they need in a timely manner." - Melisa Houston, Appraiser

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Meet A.C.E

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What is A.C.E?

1. Assessor's Community Educator
   - Our public facing, customer service chatbot located at https://www.bernco.gov/assessor/.
     - Answers emails through ace@bernco.gov
2. Assessor's Compliance Expert
   - A paralegal chatbot trained in New Mexico law, state statutes, administrative code, IAAO standards and practices, and the New Mexico Property Tax Code.
   - Paralegal Chatbot - Assessor (bernco.gov)

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Expanded Use Cases

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1. **Streamlined training resource for office staff**
   - Chatbots trained on internal documents allow staff to quickly find answers, improving efficiency and saving time.

2. **Automated form help for constituents**
   - Chatbots can assist constituents with form-related queries, improving accuracy by identifying missing fields and clarifying instructions.

3. **Easier Access to Office Policies and Procedures**
   - Chatbots can summarize lengthy office policies, providing employees with concise overviews, saving time for quick decision-making.

4. **AI in Property Appraisals**

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AI Property Appraisal

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Why

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Key Issues:

- Many government agencies and assessor's offices face limited ability to recruit
- Long training period
- Persistent vacancy
- Long backlogs and staff burnout
- Loss of institutional knowledge with large retiring workforce
- Need for ways for more **accuracy, efficiency, and consistency** for Property Appraisal

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Why Now?

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*"AI adoption and uptake for operations, assessment, and valuation by public administration organizations is… **inevitable…** because of the analytical power of these tools"*

- IAAO Artificial Intelligence Taskforce, February 2022

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C3 AI partners with government agencies across the US to deploy AI solutions for public service

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Select State and Local Government Clients

Select Federal Government Clients

National Institutes of Health

RAPID SUSTAINMENT OFFICE RSO

CDAO

U.S.ARMY

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And provides AI applications for the State & Local government – including Property Appraisal

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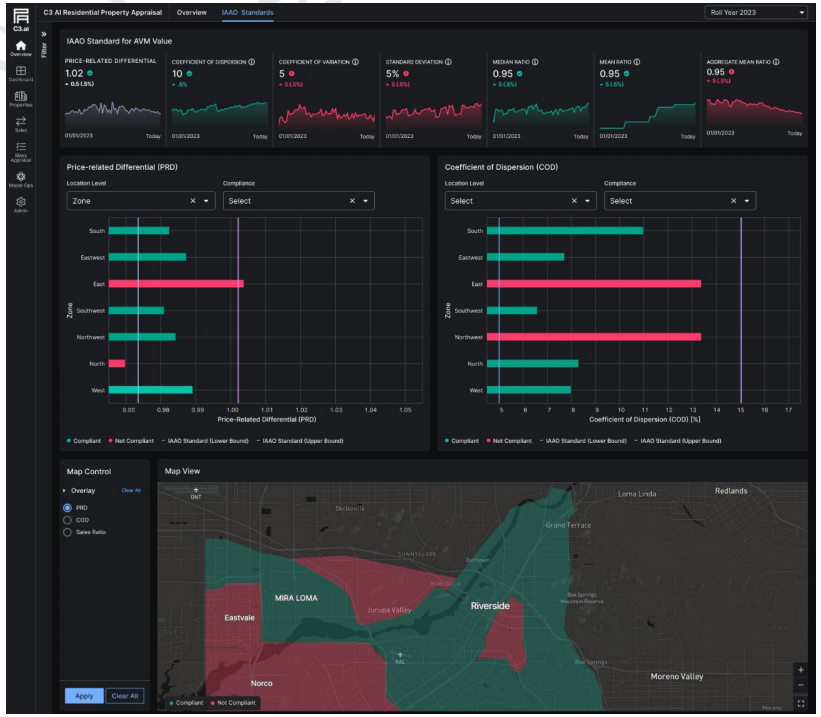
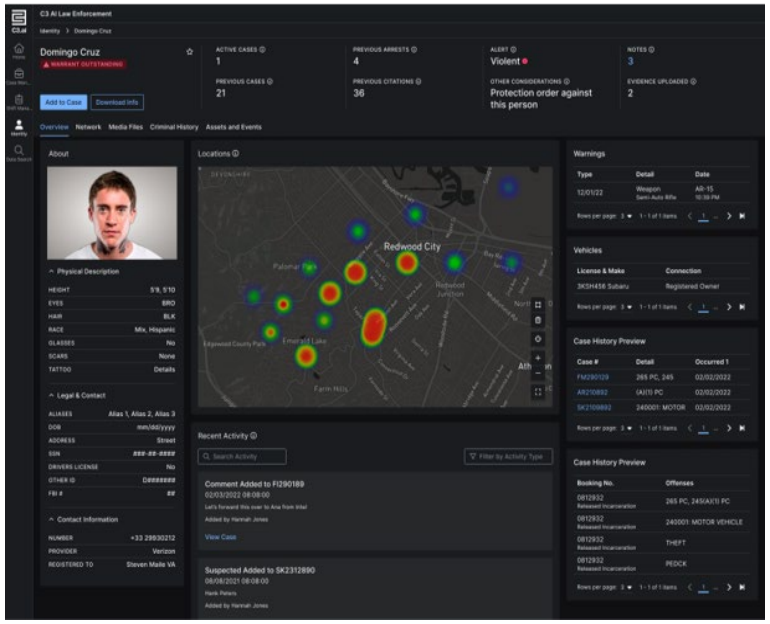
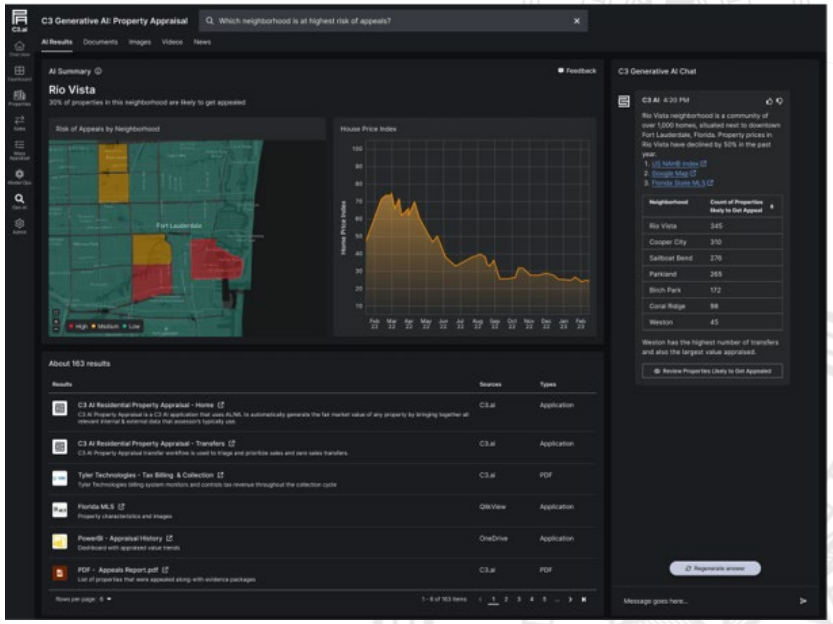
C3 AI Property Appraisal



C3 AI Law Enforcement



C3 Generative AI



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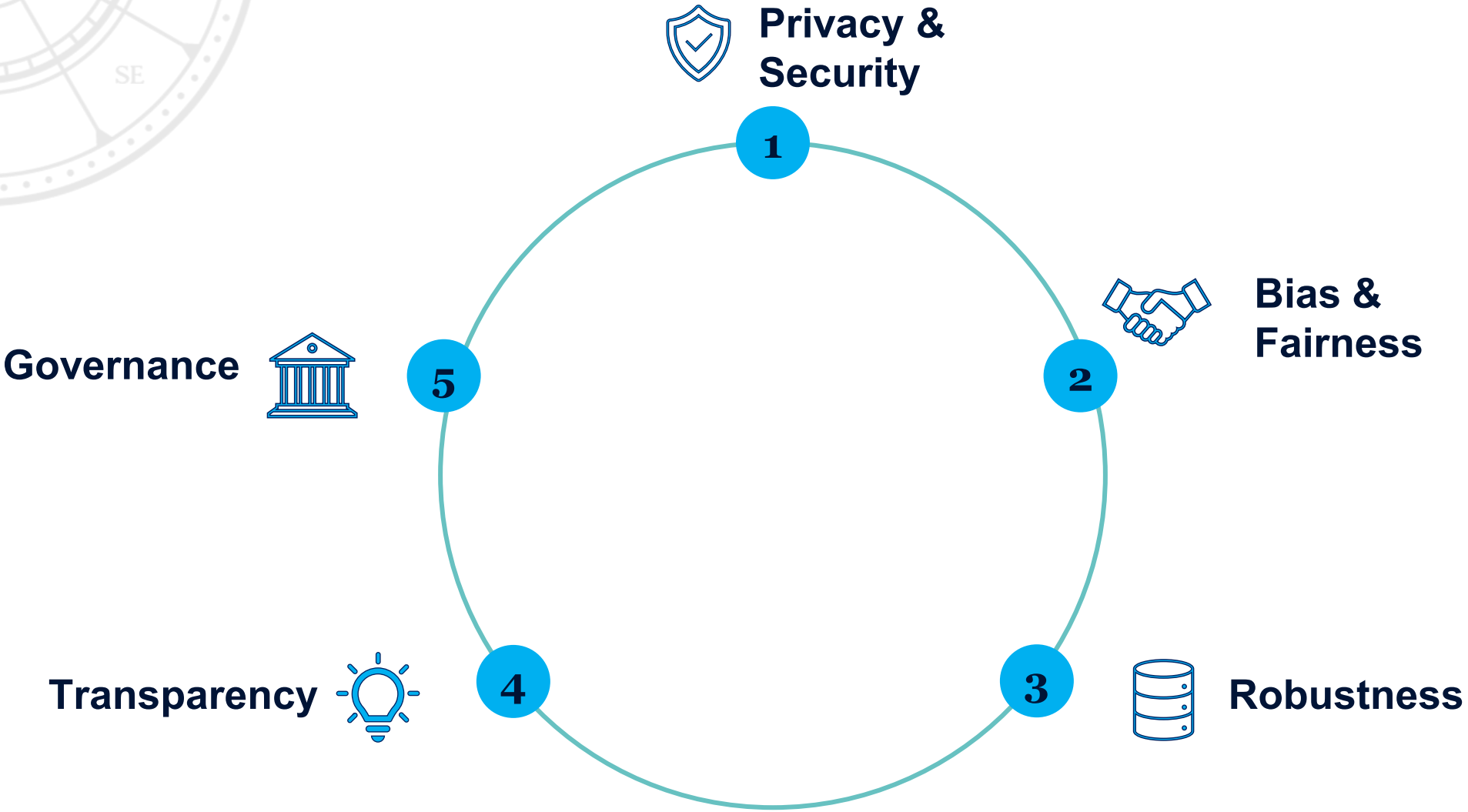
Responsible AI Software Development



Solid AI Platform Critical for Hyperscale Data Fusion and Predictive Analytics

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Improve valuation accuracy, efficiency, and consistency with AI integrated workflow

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Dashboards to view pending and high priority appraisals and IAAO metrics

Automated Valuation Models for all property types every year

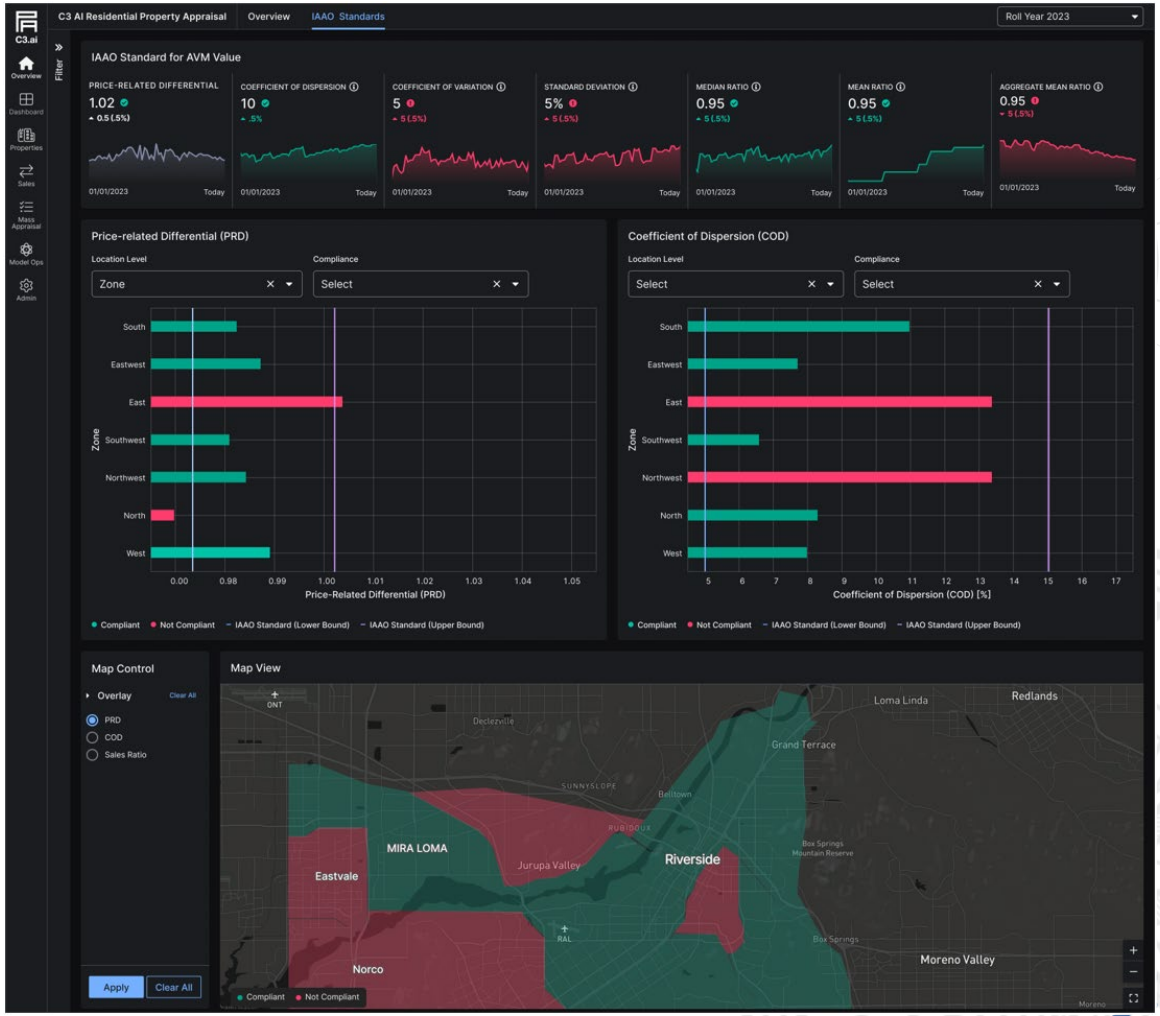
Write-Back Integration to customer's system of records

Data Cleaning for the town's CAMA database

Evidence Package to explain how AI came to a valuation

Automatic Monitoring and maintenance of models based on appraiser feedback

User-Specific access controls and appraisal settings



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Unified Interface for Broad Range of property types & valuation methodologies

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Commercial

- Office
- Industrial
- Retail
- Hotel/Hospitality
- Mixed Use
- Land
- Special Purpose

Residential

- Single-family home
- Townhouse
- Condominium
- Co-op
- Multi-family home
- Land

Valuation Events

- Transfers (Sales, Zero-Value Sales)
- Mass Appraisals

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Unify enterprise and external data on top of any infrastructure or CAMA system

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Input Data Sources

Assessment Data Sources

INTERNAL RECORDS	Roll Property Characteristics Base Value Event Tracker
THIRD PARTY DATA PLATFORMS	Market Reports Multiple Listing Services (MLS) Images and Photos Cap Rate Reports Sales Comparables and Financials
LOCATION DETAILS	Train Stations Downtown Centers Office/University Campuses Hospitals Parks/Open Space
GEOSPATIAL TOOLS	Jurisdiction Boundary Boxes Online Maps Geographic Information System (GIS)

Data Unification Layer

C3.ai Model-Driven Architecture

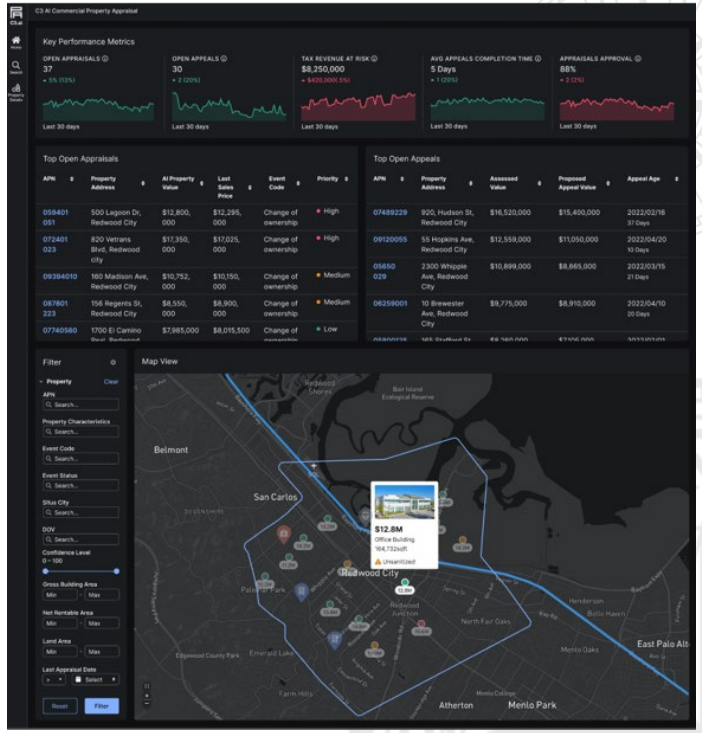
C3.ai Integrated Development Studio

- AI - Machine Learning
- Continuous Data Processing
- Data Virtualization
- AI Suite Management Services

Governance | AI | Visualizations via Tools

Infrastructure as a Service

C3 AI Property Appraisal



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Artificial Intelligence combines data sources and predicts fair market valuations quickly and accurately

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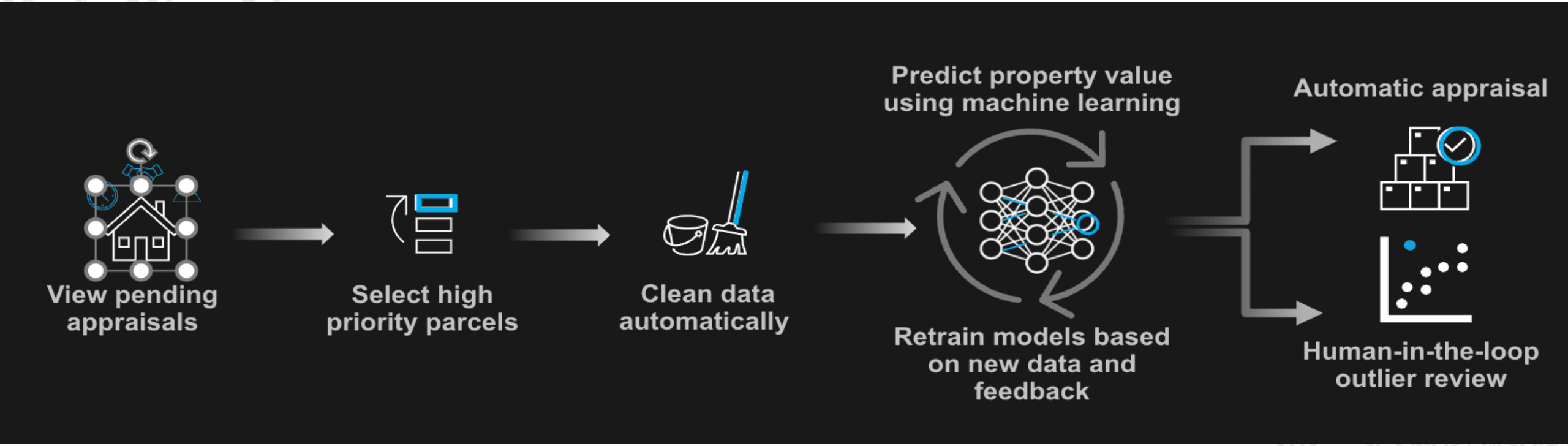

Every prediction includes robust evidence packages for explainability

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AI Property Appraisal can unlock new data-driven insights

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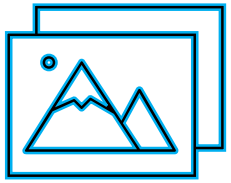
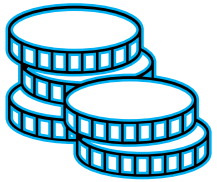
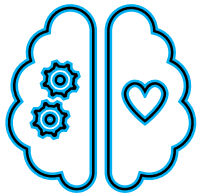


Evaluate Images
Automatically rate quality and condition from photographs

Select Comparables
Find and group similar properties automatically



Forecast Income
Predict tax roll and commercial revenue generation



Manage Appeals
Generate standardized appeals reports and summarize text

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AI Property Appraisal Results

Select US Case Studies

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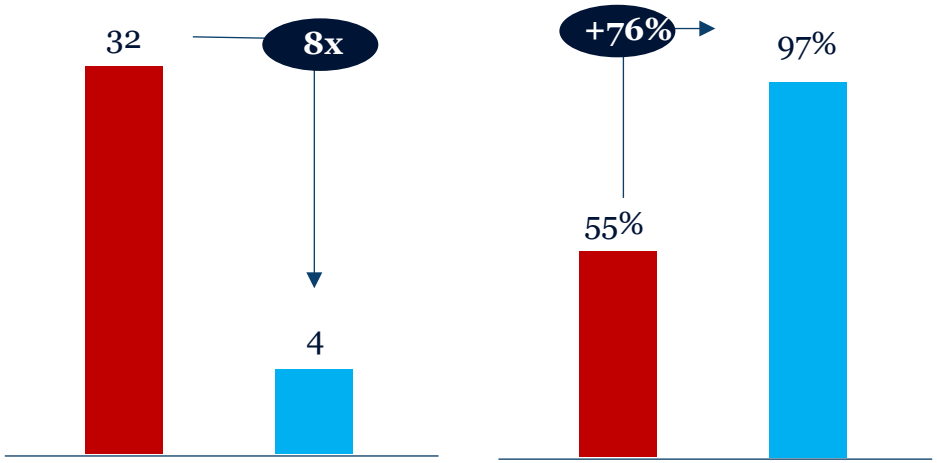
Riverside County Results

Appraisal for Residential Properties

C3 AI Residential Property Appraisal enabled 8x reduction in model complexity and 42%-points improvement in model accuracy nearly doubling the total direct enrollment



Baseline Models

C3 AI Property Appraisal Model

6 Months from project kickoff to production

650K In scope residential single-family dwellings and condos

$4M Potential annual economic benefit

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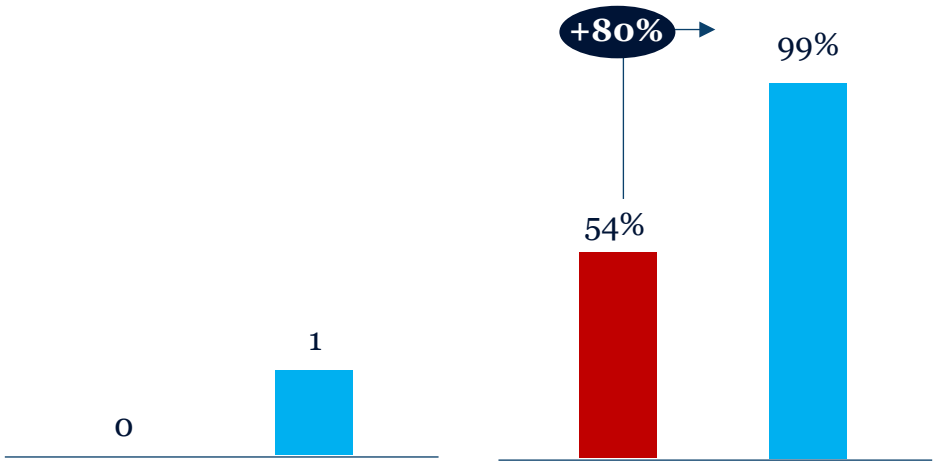
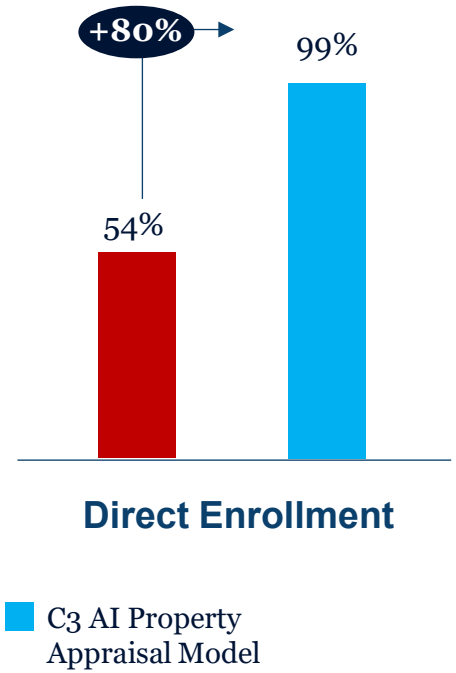
Ventura County Results

Appraisal for Residential Properties

C3 AI Residential Property Appraisal preliminary pilot results enabled a 45%-point increase – almost doubling – of total direct enrollment.





3 Months from project kickoff to production

170K In scope residential single-family dwellings

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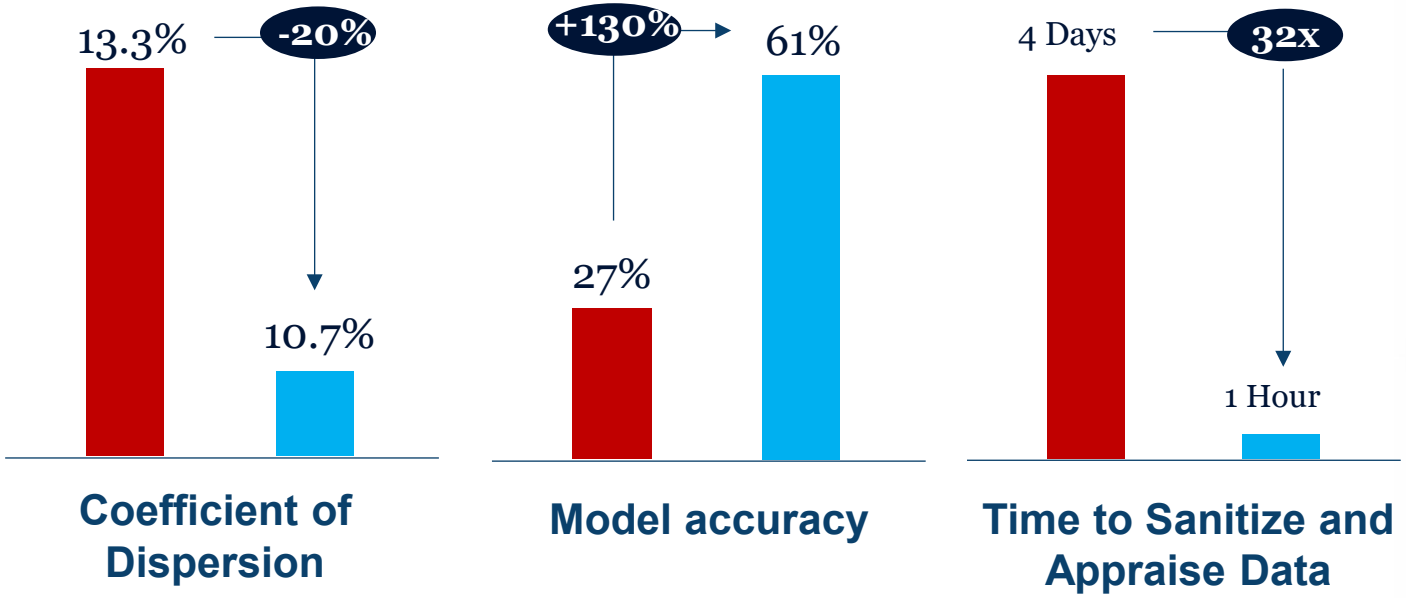
Stark County Results

Appraisal for Residential Properties

C3 AI Residential Property Appraisal enabled 20% improvement in COD and 42-points improvement in model accuracy, while taking 1/32 of the time for data sanitization



5 Months from project kickoff to production

5.5M Rows of data across three sources ingested and unified

4 Years of historical data

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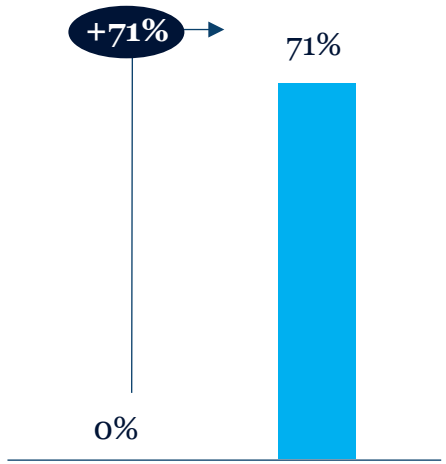
Riverside County Results

Appraisal for Commercial Properties

C3 AI Commercial Property Appraisal supports multiple property types with 71%-points improvement in direct enrollment.



Apartment

Warehouse

Offices

Industrial

4 Months project

16K In scope commercial properties including industrials, warehouses, offices, and multi-family apartments

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Final Thoughts

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"The Office of the Bernalillo County Assessor is building a better future together, with AI tools. AI is a powerful analytics tool used from coast to coast and across the oceans. Governments from around the world are in lock step with industry and business pioneers and leaders using this technology. AI is not only transformational for property owners we serve, but also for our public servants. AI means more accurate, efficient, and consistent valuations and the ability for public servants to manage an ever increasing and changing workload, which ultimately means improved public service."

- Damian Lara, Assessor for Bernalillo County, New Mexico

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