



Leveraging Artificial Intelligence to Boost Appraisal Efficiency in Virginia

VAAO Conference
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C3 AI

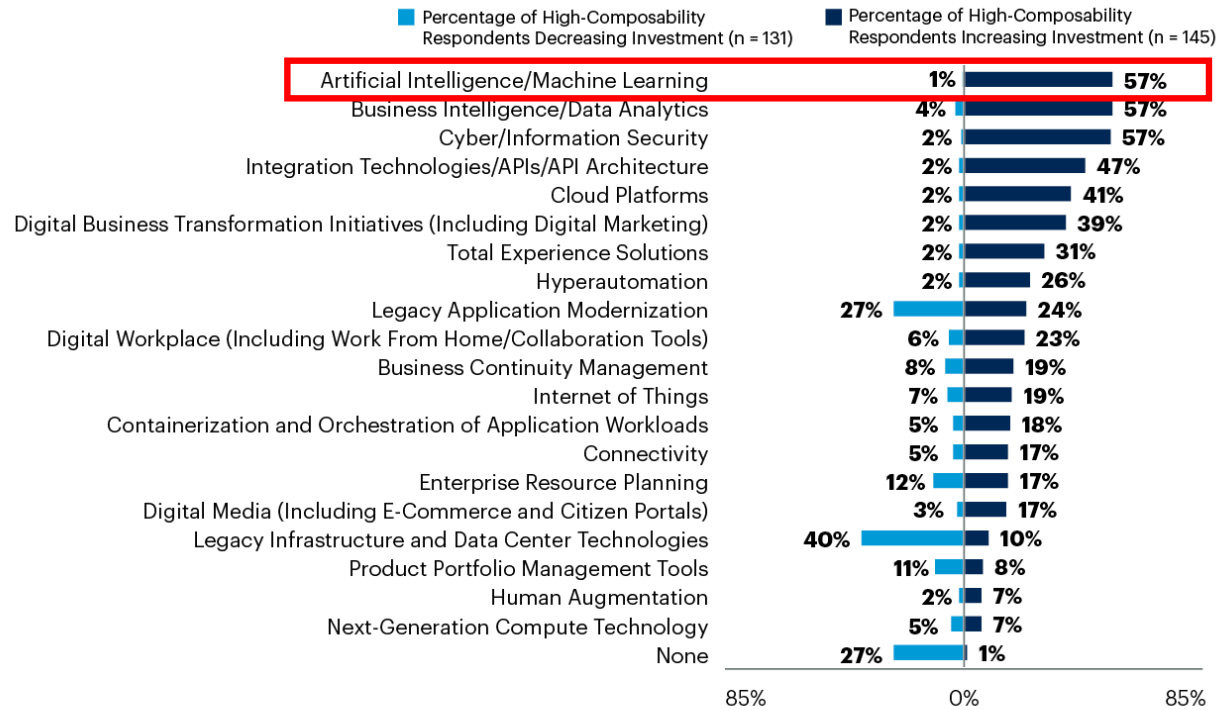


*“AI adoption and uptake for operations, assessment, and valuation by public administration organizations is... **inevitable**... because of the analytical power of these tools”*

- IAAO Artificial Intelligence Taskforce, February 2022

AI Tops List of Game-Changing Technologies

Changes in Technology Investments Percentage of High-Composability Respondents



Source: Gartner

What is AI?

Artificial Intelligence is the study of making computers generate insights from data without being explicitly programmed

“Traditional” Programming

Perform a specific task by coding specific rules

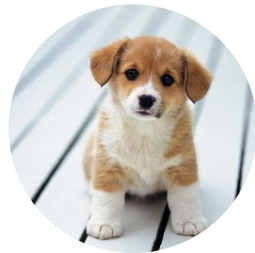
Your task: write a program to distinguish cat images from dog images



Think about features that distinguish the two classes



Write a program that formalizes your logical intuition



```
#include <stdio.h> int main() { Printf("hello\n"); }
```

- Breed
- Color
- Size
- Facial Features

.....

“Data Driven” Programming

Perform a specific task by learning directly from data

Training data:
a collection of
images with
corresponding labels



cat



dog



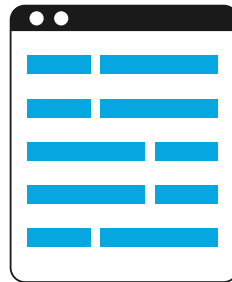
dog



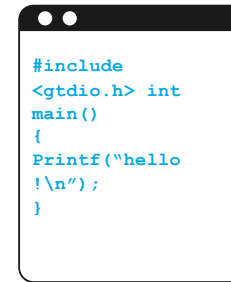
cat



AI algorithm



Automatically
generates a program
that can predict label
from input





15 Years
\$2+ Billion Invested
1100+ Employees
90+ AI Applications



C3 AI Named a Leader in AI and Machine Learning Platforms

[Learn More](#)

19 C3 AI Office Locations

Today



C3 AI has a distinguished Government Advisory Board



Jim McDonnell
Former Sheriff, Los Angeles County



Gen. John E. Hyten
Former Vice Chairman of the Joint Chiefs of Staff



Dr. Condoleezza Rice
Former Secretary of State and National Security Advisor



Kevin McCarthy
Former Speaker of the House



Lt. Gen. Edward Cardon
Former Commanding General of US Army Cyber Command



Mr. Rick Ledgett
Former Deputy Dir. Of National Security Agency

C3 AI executes multi-year programs across the government



 **Condition-Based Maintenance**



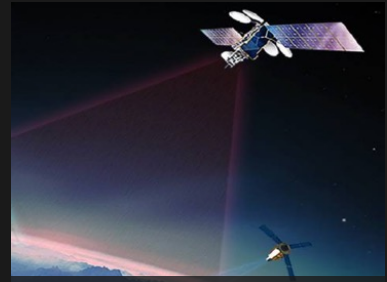
 **Common Operating Picture**





 **Intelligence Analysis for Law Enforcement**



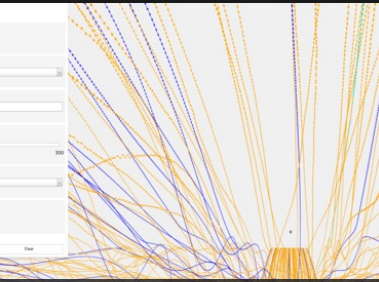
 **Mission Data File Intelligence Synthesis**





 **Enterprise Data Governance**




Hyperscale Intelligence Analysis



 **Hypersonic Synthetic Trajectory Generation**



 **Continuous Evaluation for Clearance Adjudication and Insider Threat**

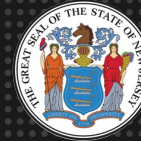


 **Property Appraisal for Assessors**



 **Satellite Anomaly Detection**

Select Government Customers



U.S. AIR FORCE



NY Power Authority



C3 AI Residential Property Appraisal

Properties > 059401051

915 Whitehall Ln, Redwood City, CA 94061

APN: 059401051

Appraisal Status: ● Open

Attributes Status: ● Sanitized

[Send for Review](#) [Export Report](#)

AI AVM VALUE ⓘ

\$2,300,000

LAST SALES PRICE ⓘ

\$2,195,000

Sold 02/20/2020

LISTING AGE ⓘ

2 days

MLS LISTING ⓘ

[View in MLS](#)

AI AVM VS LAST SALE PRICE ⓘ

\$105,000

LAST ASSESSED VALUE ⓘ

\$2,280,000

Assessed 08/29/2022

LISTED ON ⓘ

2/18/2020

[Overview](#)

[Property Gallery](#)

[Sales Comparable Valuation](#)

[Cost Valuation](#)

[Market Statistics](#)

Property Overview

Listing Age
2 days

Description
This second-level end-unit is nestled in a beautiful, quiet complex. This 3-bedroom 2.5-bath single family house with vaulted ceilings was completely remodeled in 2020. Sparkling kitchen boasts new cabinets, farm style sink, Carrara marble countertops and new stainless steel appliances.

Property Facts

Interior Features

Bedrooms	Interior Feature
4	Flooring: Vinyl/Linoleum
Bathrooms	Stories
2.5	2
Basement	Heating
Partially Finished	Central
Parking Spaces	Cooling
2	None

Property / Lot Details

Square Footage	HOA
2,530 Sq Ft	\$120/month
Ownership Type	New Construction
Single Family House	No
Year Built	Zoning
2001	R1
Lot Acres	Year Remodeled
0.51	2020

Property Condition

Classification ⓘ

Good

RATINGS ⓘ

C2

CONFIDENCE SCORE ⓘ

90%

LAST CLASSIFIED ON

02/20/2020

AI Condition Rating

[View 34 More Photos](#)

Assessed Value Trend

Identity

Identity > Michael Heinzelman

Domingo Cruz

WARRANT OUT

Add to Case

Download Info

Active Cases
1

Previous Cases
5

Previous Arrests
4

Previous Cases
5

Alert
● Violent

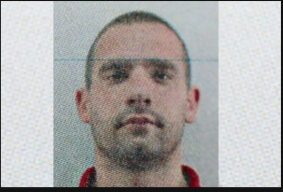
Other Considerations
PROTECTION ORDER AGAINST THIS PERSON

Notes
● 3

Evidence Uploaded
2

Overview
Network
Media Files
Criminal History
Assets and Events

Profile



Cruz, Domingo

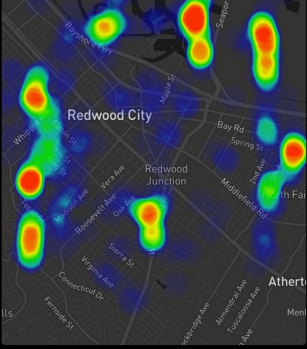
Physical Description

Height	6'2
Eyes	Brown
Hair	Brown
Race	Other
Glasses	No
Scars	Yes
Tattoo	Yes

Legal & Contact

CII	A039018492
Aliases	Pee Wee
DoB	08/20/1972 (age 49)
Address	1299 Tulane Ave, Est Palo Alto CA 94303
Mailing Address	1299 Tulane Ave, Est Palo Alto CA 94303
SSN	422-23-233

Locations



Top Current Affiliated Identities

Person	Connection
Maurice Ortiz	90% S-S
George Sanchez	90% S-S
Frederiko Garcia	90% S-S
Gabriel Williams	90% S-S
Jonathan Heinz	90% S-S
Derreck Allen	90% S-S
Abigail Allen	90%

Warnings

Type	Detail	Date
Weapon	AR-15 Semi-Auto Rifle	12/01/22 10:39 PM

Vehicles

License & Make	Owner

Case History Preview

Case #	Offenses	Occurred
FM290129	265 PC, 245 (A)(1) PC	02/02/202
AR210892	240001: MOTOR VEHICLE THEFT	02/02/202
SK2109892	PEDCK	02/02/202

Incarceration History Preview

Booking #	Offenses
0812932	265 PC, 245(A)(1) P

Recent Activity

Q Search activity Filter by activity type

Today (08/08/2021)

8 photos added
02/03/2022 08:08:00
This is a comment about the photos that were added
Added by Hannah Jones

Social media updated



C3 AI Law
Enforcement

C3 Generative AI: Law Enforcement

AI Results Documents Images Videos News

AI Summary Feedback

East Palo Alto has the highest count (7) of unsolved burglaries

Case Locations

Case Status

Date	Active	Closed
1/30	5	0
2/6	6	3
2/13	6	5
2/20	7	5
2/27	8	5
3/6	7	5
3/13	7	5
3/20	8	5

About 20 results

Results Sources Types

C3 Generative AI Chat 7:47 PM

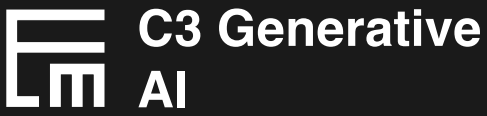
C3 AI

There are 24 unsolved residential burglaries currently being tracked. The highest density of residential burglaries is in East Palo Alto. Here's an overview of the unsolved burglaries by city:

City	Total No. Burglaries
San Mateo County	19
East Palo Alto	7
San Mateo	3
Redwood City	3
Foster City	2
Woodside	2
Hillsborough	1
Half Moon Bay	1
San Clara County	5
Mountain View	2
Palo Alto	2
Stanford	1

Here's a list of the 5 most recent unsolved residential burglaries in the last week:

23-58293 03/15/2023 Summarize



The C3 AI solution includes...



C3 AI Platform

Enterprise AI application development platform



C3 AI Applications

90+ Turn-key SaaS Applications

3-6 month production deployments



C3 AI Named a Leader in AI and Machine Learning Platforms

[Learn More](#)

C3 AI Platform: Hyperscale Data Fusion and Predictive Analytics

C3 AI APPLICATIONS

CUSTOMER APPLICATIONS

SaaS

Reliability Suite	Supply Chain Suite	Sustainability Suite	Defense and Intelligence Suite	Financial Services Suite	Public Sector Suite	Data Vision	AI CRM Suite	Customer Extension	Custom Application
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C3 AI Platform

Low Code / No Code Tools

Model Driven Architecture

C3 AI Studio

Deep Code > Visual Studio Code | JupyterLab

Low Code > Application Canvas

No Code > C3 AI Ex Machina

C3 AI Types

Data Integration and Connectors

SAP	AWS IoT
Oracle	Databricks
Salesforce	Snowflake
IBM	Azure Data Lake
OSI PI	Weather
Microsoft	Commodity Data

Integration Services

Canonical
Expressions
IoT
Source
Transform
Virtualization

Extensible Data Models

Cross-Industry Foundation
Reliability
Supply Chain
Sustainability
CRM
Aerospace
Manufacturing
Financial Services
Defense and Intel
Energy
Healthcare
Retail/CPG
Telecommunications
Transportation

Data Persistence

NoSQL Storage
Key Value Store
Cloud Object Storage
RDBMS
Distributed File System
File Systems
HDFS

Machine Learning Framework and Services

ML Pipeline	Model Deployment Framework	Model Explainability
ML Ops	Model Lineage	Model Versioning
Feature Store	Model Governance	Auto Metadata Creation
Amazon SageMaker	Azure ML	Google Vertex AI

Data Governance

Veracity	Auditing	Security
Lineage	Observability	Privacy
Profiling	Ontology	

Continuous Analytics Processing

Batch	Map Reduce
Queue	Stream

Application UI

React with C3 AI Type System Bindings
Component Library
Geospatial Visualizations
Graph Network Visualizations
Translations

Third Party Tools

Deep Code Tools

Jupyter	Eclipse
R Studio	IntelliJ
VS Code	

Visualization and BI Tools

Alteryx	Domo
Tableau	Micro Strategy
Qlik	PowerBI
Looker	Power Apps

UI Frameworks

React	JS
Angular	

Platform Management Services

Systems Management	Runtime	Logging	Scheduler	Roles & Responsibilities	Access Controls	Authentication	Application Logic	Time Series	State Machine and Workflows
Monitoring	Deployment	Auditing	Users	APIs	Hierarchy Modeling	Encryption	Multitenancy	Application Alerts	CI / CD

Data In



Insights Out



Application Platform

IaaS

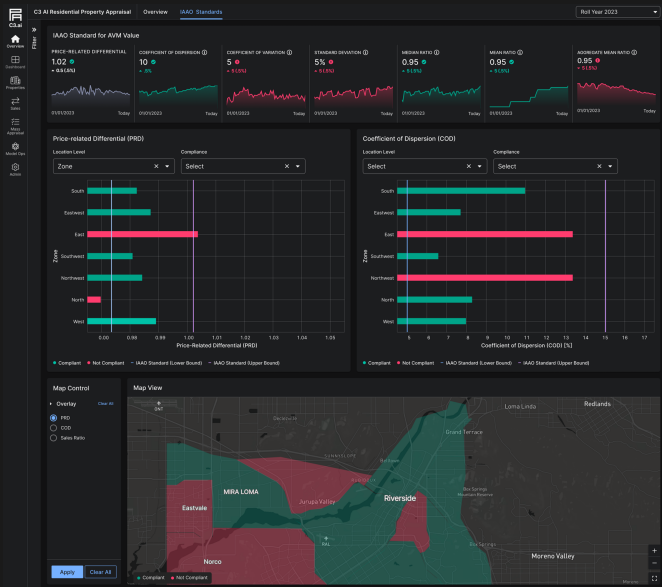
aws	Microsoft	Google Cloud	PRIVATE CLOUD	EDGE
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Amazon SQS	Amazon S3	Amazon Redshift	Amazon Kinesis	Amazon DynamoDB	Azure Stack	Azure Blob Storage	Azure Event Monitor	Azure Database for PostgreSQL	Azure Event Hub	Google Maps	Google Spanner	Google BigQuery	Google Cloud Speech	Google Cloud Translation	Kubernetes	Nvidia	Intel	ARM	HP
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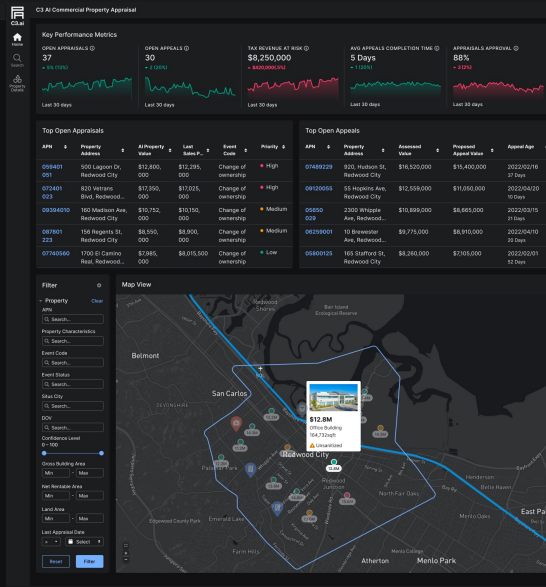
Overview of C3 AI Property Appraisal

C3 AI Property Appraisal Applications

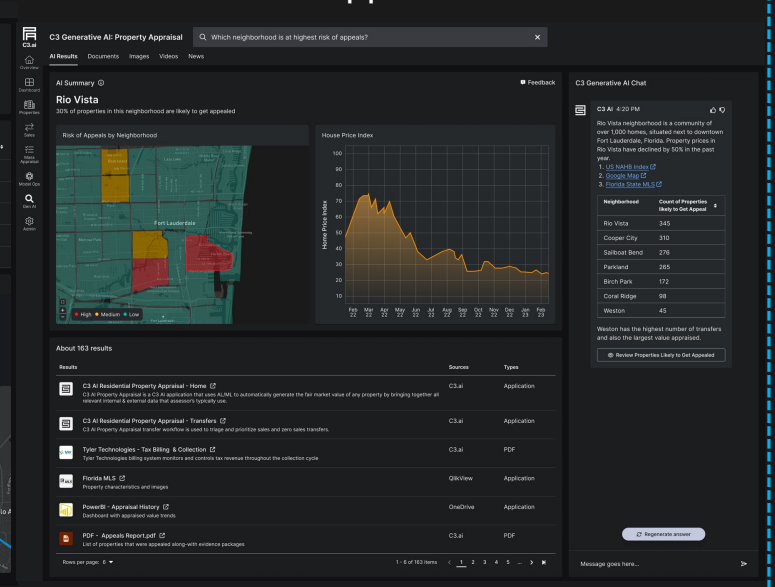
Residential Property Appraisal



Commercial Property Appraisal



Gen AI for Property Appraisal



C3 AI Property Appraisal

Improve valuation **accuracy, efficiency, and consistency** with artificial Intelligence integrated into your workflow

Dashboards to view pending and high priority appraisals

Automated Valuation Models for all property types

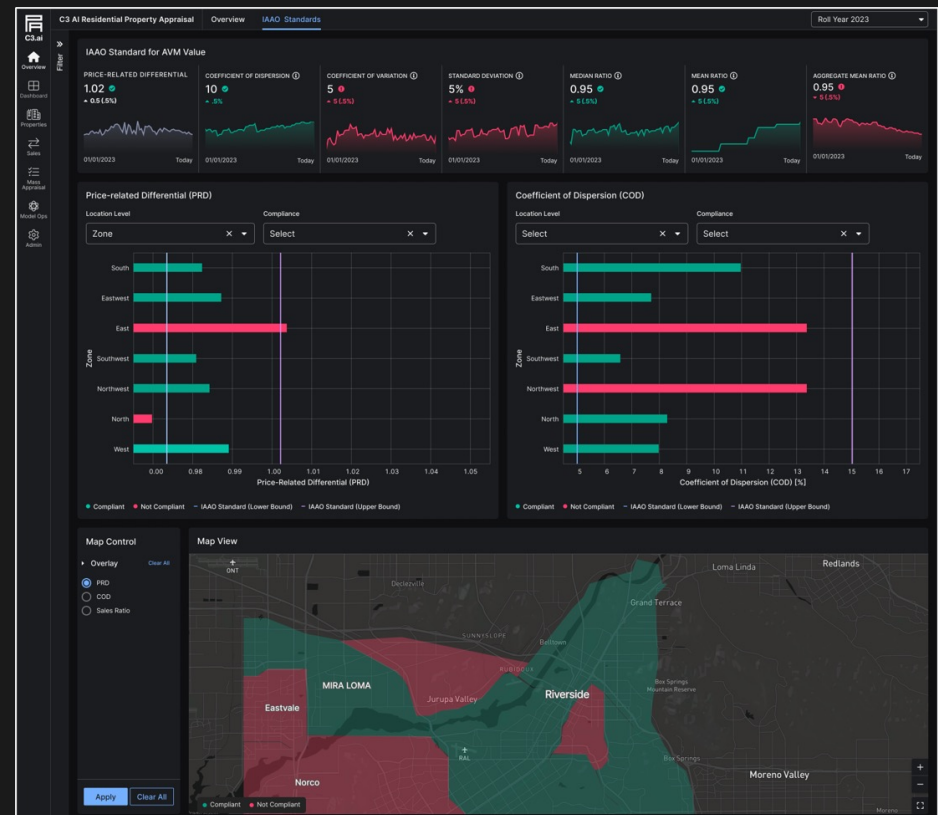
Write-Back Integration to customer's Computer-Assisted Mass Appraisal (CAMA) system

Data Cleaning for the county's CAMA database

Evidence Package to explain how AI came to a valuation

Automatic Monitoring and maintenance of models

User-Specific access controls and appraisal settings



Unified Interface for Broad Range of property types and valuation methodologies



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

Residential | C3 AI Property Appraisal Unifies All Enterprise and External Data to Deliver AI Powered Recommendations

CAMA System

- Roll
- Property Characteristics
- Base Value
- Event Tracker

Map Data

- Online Maps
- Geographic Information System

Location Data

- Waterfront
- Downtown Centers
- Office Campuses
- Schools
- Universities

3rd Party data

- MLS
- CoreLogic
- Marshall & Swift Cost

Continuously updated data image

C3 AI Platform

Model Driven Architecture

C3 AI Studio | C3 AI Ex Machina

Data Integration | AI/ML Model Development, ML Ops, and Application Development

Operations & Security Services

Infrastructure as a Service

Internal Data source integrated

External data sources integrated with C3 AI Property Appraisal



C3 AI Residential Property Appraisal

The screenshot displays a user interface for a residential property appraisal. At the top, there's a navigation bar with a 'High Priority Sale' indicator. Below this, a property summary is shown with a 'Good' recommendation badge. The main content area includes a table with property details such as 'Parcel Number', 'Commission Number', 'Subdivision', and 'Neighborhood'. A map view is visible at the bottom, showing the property location. On the right side, there's a vertical gallery of interior photos.

Machine learning can also unlock new data-driven insights



Evaluate Images

Automatically rate quality and condition from photographs



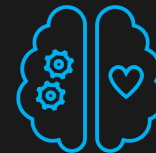
Select Comparables

Find and group similar properties automatically



Forecast Income

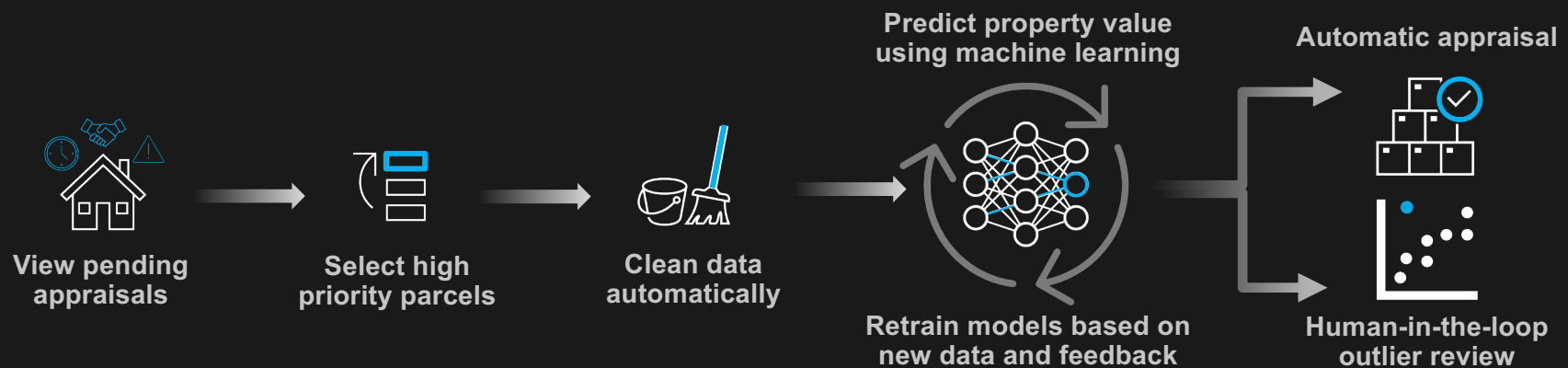
Predict tax roll and commercial revenue generation



Manage Appeals

Generate standardized appeals reports and summarize text

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



Every prediction includes robust **evidence packages** for explainability

Automatically create hearing-ready Appeals & Evidence Packages



Evidence Package

Highlight which features were important in a specific appraisal



Effort

Reduce effort to create evidence packages by up to 90%



Appeals Reports

Appeals reports per your standard, high explainability



Hands Free Generation

Automatically generated with valuation

Application Demo

C3 AI Property Appraisal caters to multiple user personas

Appraiser



Apply IAAO recommended appraisal methods to determine accurate fair market value of a property for taxation

Appraiser Manager



Accountable for overall performance and target tax roll completion of their team

IT Manager



Responsible for maintenance of IT systems and relevant data feeds

Data Expert/Modeler

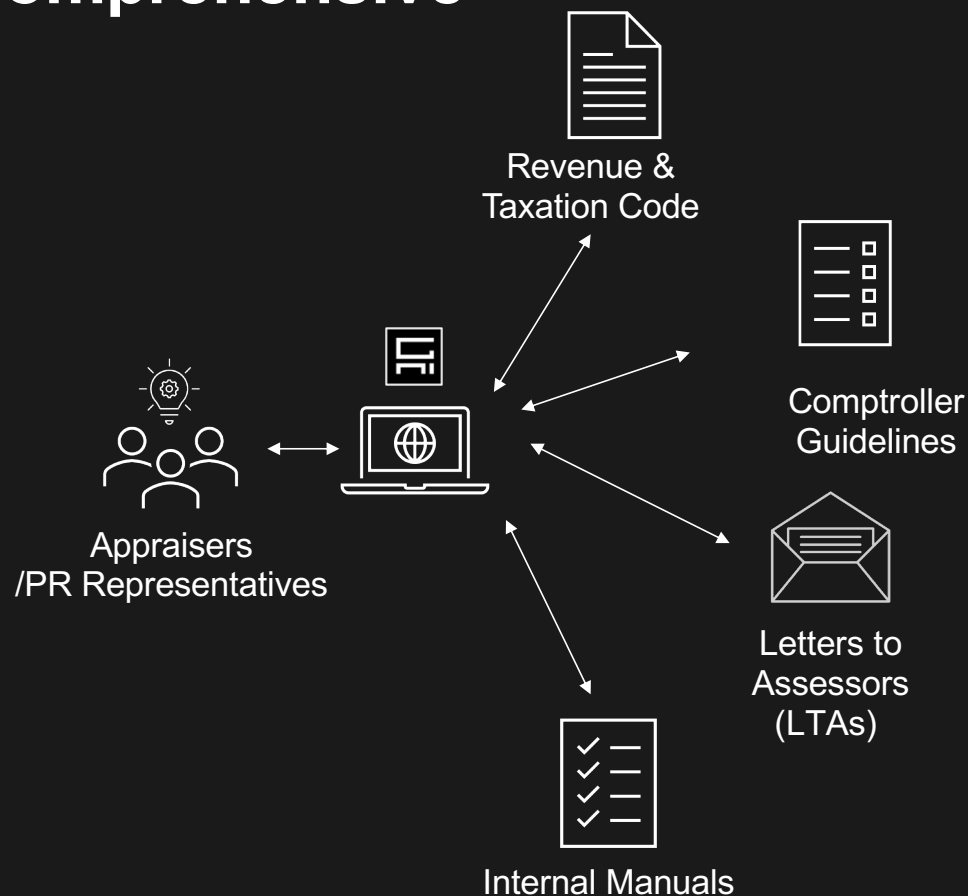


Responsible for maintaining, monitoring, and enhancing models and data quality



C3 Generative AI

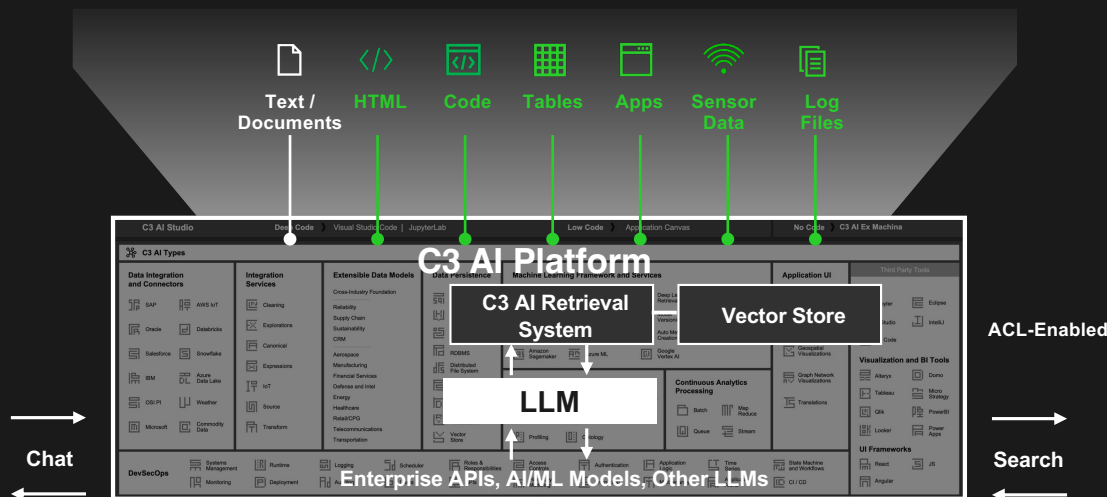
Approach with C3 AI: More efficient, accurate, and comprehensive



Key Benefits

- Accurate, instant, and summarized responses to appraiser questions
- Full traceability into source documents
- Human-in-the-loop feedback for ongoing performance turning

C3 Generative AI



- ✓ Deterministic Responses
- ✓ Traceable to Ground Truth
- ✓ Enterprise Access Controls
- ✓ No Incremental Cybersecurity Risk
- ✓ No LLM-Caused Data Leakage
- ✓ Hallucination Free
- ✓ No IP Liability Exposure
- ✓ LLM Agnostic

Application Demo



C3 Generative AI

W|



what is calamity

WHat is a PCOR

what is a PCOR?

What is your name?

what is a calamity

what is form 444

what is an appeal application?

where are the county offices?

ownership change meaning



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