
Texas Equity AI

AI-Powered Property Tax Intelligence Platform

The Most Advanced Property Tax Protest Technology in Texas

600K+

Properties Analyzed

2.4M

Deed Records

5

Counties Covered

8

AI-Powered Features

"The homeowner deserves to see exactly what we found and why."

Full transparency. No contingency fees. 100% of the savings go to the homeowner.

The \$73 Billion Problem

Why Texas Homeowners Are Overtaxed

Texas has NO state income tax. Property taxes are the primary revenue source, averaging 1.8-2.5% of assessed value annually. This creates a system where appraisal districts have a financial incentive to OVER-assess properties.

The result? Millions of homeowners pay thousands of dollars more in property taxes than they should. Most don't know they're over-assessed -- and those who do often lack the expertise or evidence to successfully protest.

\$73B

TX Property Tax Revenue

65%

Homeowners Don't Protest

\$1,200

Avg. Savings per Protest

86%

Protest Success Rate

The Traditional Approach is Broken

X Black-Box Services

Companies like Ownwell charge 25-35% of savings but never show HOW they found the reduction. Homeowners are in the dark.

X DIY is Overwhelming

Homeowners who self-protest face 200+ pages of tax code, confusing appraisal data, and ARB panels trained to reject weak evidence.

X One-Size-Fits-All

Existing tools use generic comparisons without understanding condition, location, or neighborhood-specific factors.

X No Proactive Alerts

Homeowners only discover over-assessment AFTER they receive their tax bill -- when protest deadlines may have passed.

Our Solution

AI That Sees What Humans Miss

Texas Equity AI is the only platform that combines computer vision, machine learning, geo-intelligence, and legal AI to produce ARB-ready evidence packets that win protests. Every analysis is fully transparent -- homeowners see exactly what we found and why.

[*] Multi-Model AI Engine

TRIPLE REDUNDANCY

Three AI providers (Gemini, GPT-4o, Grok) analyze every property. If one model misses something, the others catch it. Zero single points of failure.

[V] Computer Vision Analysis

PATENT-PENDING

3-angle Street View imagery analyzed for 15+ defect categories: roof deterioration, foundation cracks, siding damage, drainage issues, and more.

[=] KNN Equity Intelligence

ML-POWERED

Machine learning selects the 5 most comparable properties using 7 feature dimensions -- not random picks, but scientifically optimal matches.

[M] Geo-Intelligence Layer

AUTOMATED

Automated detection of external obsolescence: highways within 500ft, industrial facilities, flood zones, power infrastructure -- all factors that reduce value.

[#] Predictive Success Model

544K RECORDS

XGBoost ML model trained on 544,583 real HCAD ARB hearing outcomes (82% accuracy). Predicts exact win probability by blending historical base rates with 18 property-specific evidence signals.

[D] Legal-Grade Output

ARB-READY

ARB-format evidence packet with Texas Tax Code citations, professional adjustment grid, and auto-filled Form 41.44. Ready to present at hearing.

Complete Platform Capabilities

30 Production Features -- All Live Today

DATA ACQUISITION & ENRICHMENT

| | |
|-----------------------------|--|
| Multi-District Connectors | HCAD, TAD, CCAD, DCAD, TCAD -- 5 Texas counties |
| Bulk Property Database | 600K+ HCAD records pre-loaded |
| HCAD Live Scraper | Playwright browser automation for real-time data |
| NonDisclosureBridge | RentCast + RealEstateAPI fallback for non-disclosure |
| Commercial Enrichment Agent | Multi-source fallback for commercial properties |
| Deed Records Import | 2.4M HCAD deed transfer records |

AI / MACHINE LEARNING ENGINE

| | |
|--------------------------------|--|
| KNN Equity Comp Selection | scikit-learn NearestNeighbors with 7 feature dimensions |
| 3-Angle Vision Analysis | Street View + Gemini/GPT-4o/Grok defect detection |
| 4-Layer Property Type Resolver | Automatic residential/commercial/land classification |
| AI Narrative Agent | Gemini + OpenAI fallback protest narratives |
| Professional Valuation Service | ARB-format adjustment grid |
| Anomaly Detection Engine | Z-score neighborhood outlier detection |
| AI Condition Delta Scoring | Vision AI condition comparison with depreciation |
| XGBoost Win Predictor | 544K-record HCAD hearing model (82% accuracy, AUC 0.815) |

ENRICHMENT & INTELLIGENCE LAYERS

| | |
|---------------------------------|---|
| FEMA Flood Zone Detection | Real-time NFHL API flood zone queries |
| Permit Cross-Reference | Building permit flags for subject + comps |
| Sales Comp Engine | RentCast + RealEstateAPI hybrid |
| Cost Approach Analysis | Marshall & Swift replacement cost benchmark |
| Market Analysis | Neighborhood median \$/sqft and ratios |
| Geo-Intelligence Layer | Geocoding + external obsolescence detection |
| Neighborhood Crime Intelligence | OpenData API real-time crime radius search |

REPORT & DELIVERY

| | |
|--------------------------|--|
| Evidence Packet PDF | 1,900-line comprehensive ARB-ready report |
| Auto-Filled Form 41.44 | Official HCAD protest form pre-populated |
| Vision Comp Grid | Side-by-side AI photo comparison |
| ML Win Probability Score | XGBoost hybrid prediction with explainable factors |
| 4-Year Valuation Trend | Assessment trajectory chart |
| QR-Linked Digital Report | Mobile-optimized interactive dashboard via QR |

10 AI Innovations

Intelligence Layers Built This Quarter

- 1 Deed Records Import**
Bulk-imported deed transfer records from HCAD with sale dates. Enriches every equity comp with verified transaction recency. Last Sale row in every report.
- 2 Anomaly Detection Engine**
Z-score analysis on Price Per Square Foot across entire neighborhoods. Flags the top outliers and quantifies estimated over-assessment amount.
- 3 AI Condition Delta Scoring**
Vision AI scores subject (1-10) and each comp. Calculates condition delta and translates to depreciation % citing TX Tax Code 23.01.
- 4 XGBoost Win Predictor**
XGBoost gradient-boosted classifier trained on 544,583 real HCAD ARB hearing outcomes. Hybrid approach blends historical base rate (40%) with 18 property-specific evidence signals (60%) to predict exact win probability.
- 5 Geo-Intelligence Layer**
Nominatim + Google geocoding, haversine distance, and external obsolescence detection (highways, industrial, commercial, power infrastructure).
- 6 Neighborhood Crime Intelligence**
Live API integration (e.g. SODA API) checks violent/property crime incidents within a 0.5-mile radius over 365 days to prove External Obsolescence.
- 7 QR-Linked Digital Report**
Every PDF includes a QR code linking to a mobile-optimized interactive dashboard for digital evidence sharing.
- 8 One-Click Neighborhood Scan**
Enter a neighborhood code, instantly analyze ALL properties, rank by over-assessment severity. Click any flagged property to auto-generate a full protest report.
- 9 Mobile-First Report Viewer**
QR code on every PDF links to an interactive digital dashboard. Homeowners scan with their phone and see: key metrics, savings analysis, anomaly scoring, and full protest narrative.
- 10 Annual Assessment Monitor**
Track any property for year-over-year assessment changes. Configurable alert thresholds flag properties where assessments spike. Color-coded dashboard.

Competitive Advantage

Why We Win Against \$50M+ Funded Competitors

| Feature | AI Vision | ML Comps | Anomaly | Geo-Intel | Predictor | Savings | Transparent |
|-----------------|-----------|----------|---------|-----------|-----------|---------|-------------|
| Texas Equity AI | YES | YES | YES | YES | YES | YES | YES |
| Ownwell (\$50M) | NO | Partial | NO | NO | NO | YES | NO |
| PropertyTax.io | NO | Partial | NO | NO | NO | YES | NO |
| TX Tax Protest | NO | NO | NO | NO | NO | Partial | NO |
| Smart Appeal AI | NO | Partial | NO | NO | NO | NO | Partial |
| AppealEdge | NO | Partial | NO | NO | NO | NO | YES |
| DIY (Homeowner) | NO | NO | NO | NO | NO | NO | YES |

Our Three Unfair Advantages

1. Transparency

Every competitor is a black box. We show the homeowner exactly what our AI found, which comps were selected, why the condition delta matters, and the specific Tax Code sections that support the argument. This builds trust and converts at 3x the rate of opaque services.

2. Multi-AI Redundancy

We run Gemini, GPT-4o, and Grok in parallel. If Google's model misses a roof defect, OpenAI catches it. If OpenAI hallucinates a comp, Gemini validates. This triple-check architecture is unique in the industry.

3. Data Depth

600K+ bulk property records, 2.4M deed transfers, 5 county connectors, and multiple enrichment APIs. Most competitors rely on a single data source. Our multi-source approach means more accurate comps, better anomaly detection, and stronger evidence.

Technology Stack

Enterprise-Grade Architecture

Built on modern, scalable infrastructure with security-first design. Row-Level Security (RLS) on all database tables. Multi-tenant ready.

AI / Machine Learning

- Google Gemini 2.0 Flash -- Primary vision & narrative AI
- OpenAI GPT-4o -- Fallback vision & analysis
- xAI Grok -- Third-layer validation
- XGBoost -- Protest outcome predictor trained on 544K HCAD hearings (82% acc)
- scikit-learn KNN -- Equity comp selection algorithm
- NumPy / Pandas -- Statistical analysis engine

Backend Infrastructure

- FastAPI -- High-performance async Python backend
- Supabase (PostgreSQL) -- Managed database with RLS
- Playwright -- Browser automation for live data scraping
- Google Maps API -- Street View, geocoding, Places
- Nominatim (OSM) -- Free geocoding with zero API cost

Data Sources

- HCAD, TAD, CCAD, DCAD, TCAD -- 5 Texas county connectors
- RentCast + RealEstateAPI -- Sales comp enrichment
- FEMA NFHL -- Flood zone detection
- County deed records -- 2.4M transfer records

Frontend & Delivery

- Streamlit -- Interactive web dashboard
- FPDF2 -- Professional PDF evidence packet generation
- QR Code -- Mobile-first report access
- Responsive CSS -- Phone-optimized report viewer

Market Opportunity

A \$4.2B Addressable Market in Texas Alone

7.2M

TX Homeowners

\$4.2B

TAM (Texas)

\$18B

TAM (US)

23%

CAGR PropTech

Revenue Model

B2C: Individual Reports

\$29-49 per report

Homeowners generate their own evidence. No contingency fees -- they keep 100% of savings. At avg. \$1,200 savings, ROI is 24-41x.

B2B: Tax Consultant License

\$199-499/mo

Unlimited neighborhood scans, batch processing, white-label reports. One consultant with 200 clients = \$60K-120K in annual protest savings.

B2B2C: Brokerage Integration

Revenue share

Real estate brokers offer protest analysis as a value-add. "Buy this home, and we'll protest your taxes every year."

SaaS: Assessment Monitor

\$9.99/mo per property

Annual subscription for assessment tracking and alerts. Recurring revenue with minimal marginal cost.

The Evidence Packet

What Every Homeowner Receives

Each protest generates a comprehensive, ARB-ready evidence packet. This is what sets us apart -- no other platform produces this level of detail.

>> **Cover Page**

Property summary with anomaly badge, protest viability score, estimated savings range, and QR code linking to the interactive digital report.

>> **AI Methodology Page**

Explains the multi-model AI approach, building trust with ARB panels and homeowners alike.

>> **Account History**

Owner info, property details, 4-year valuation trend chart showing assessment trajectory.

>> **Equity Comparison Grid**

5 ML-selected comparables with: address, value, \$/sqft, year built, last sale date, condition score, and distance from subject.

>> **AI Vision Analysis**

Side-by-side 3-angle Street View photos with AI-detected defects marked.

>> **Geo-Intelligence Map**

Static map showing subject and comp locations with distances.

>> **Opinion of Value**

AI-generated justified value with supporting calculations and savings prediction.

>> **Legal Narrative**

Multi-page protest citing Texas Tax Code Sections 23.01, 41.43(b)(1), and 42.26.

>> **Appendices**

FEMA flood zone data, permit cross-reference, cost approach analysis.

Ready to Transform Property Tax Protests?

Texas Equity AI delivers what no other platform can:

AI-powered evidence that wins 86%+ of protests

Complete transparency -- homeowners see everything

No contingency fees -- 100% of savings stay with the homeowner

5 counties live, with nationwide expansion ready

8 AI features, all production-ready today

Let's Talk

texasequityai.streamlit.app

Schedule a demo or start your free analysis today