



# Sequencing Property DNA: Revolutionizing Real Estate Investments with AI


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Skyline AI is an AI investment manager - not a data provider. As such we do not sell data, insights, or license our proprietary technology. Skyline AI uses its technology to gain a competitive edge in commercial real estate investments.

An aerial view of a city skyline at dusk, with a river in the foreground. The image is overlaid with a dark blue digital interface featuring vertical lines and data points, suggesting a high-tech or data-driven theme.

*We live in extraordinary times. Emerging technology is increasingly impacting long-established norms across every sector, saving lives, boosting data-based processes, enhancing mobility and organization, and opening new commercial markets. In certain cases, technological developments, though profoundly revolutionary, can be demystified to represent a new way - an unprecedented, groundbreaking way - to tackle old problems.*

*We're excited to share this summary of one such innovative system in the real estate investment space, using the commonly understood metaphor of DNA sequencing as an anchor. We hope you find it valuable.*

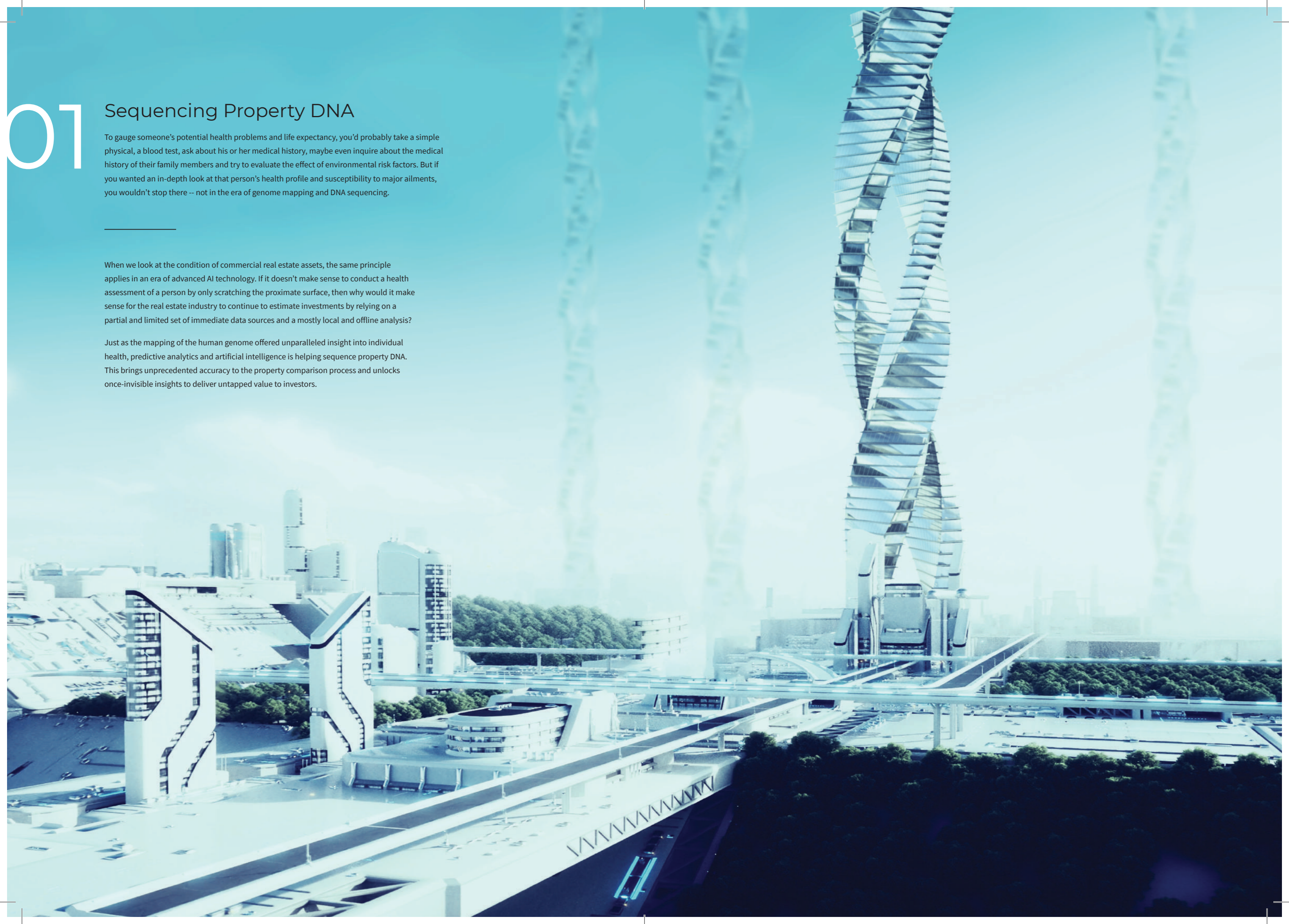
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# 01 Sequencing Property DNA

To gauge someone's potential health problems and life expectancy, you'd probably take a simple physical, a blood test, ask about his or her medical history, maybe even inquire about the medical history of their family members and try to evaluate the effect of environmental risk factors. But if you wanted an in-depth look at that person's health profile and susceptibility to major ailments, you wouldn't stop there -- not in the era of genome mapping and DNA sequencing.

When we look at the condition of commercial real estate assets, the same principle applies in an era of advanced AI technology. If it doesn't make sense to conduct a health assessment of a person by only scratching the proximate surface, then why would it make sense for the real estate industry to continue to estimate investments by relying on a partial and limited set of immediate data sources and a mostly local and offline analysis?

Just as the mapping of the human genome offered unparalleled insight into individual health, predictive analytics and artificial intelligence is helping sequence property DNA. This brings unprecedented accuracy to the property comparison process and unlocks once-invisible insights to deliver untapped value to investors.



# 02

## Utilizing New Data

Traditional data sources like rent, occupancy and employment serve as the main ingredients in real estate analysis and will remain relevant forever. Yet there's a treasure trove of data beyond this traditional benchmark. There is potential to offer a superior ability to assess investments and perform predictions. When you combine traditional data with new types of data that are made possible for analysis with AI, you get a whole that is greater than the sum of its parts.

AI allows us to peel back the surface of what was always considered the limit of data-based asset understanding and tap into exponentially more sources, generating huge new quantities of actionable information.

Consider the insights that can be generated when you aggregate traditional asset data with these new data sources:

# TRADITIONAL DATA SOURCES

### COMMERCIAL REAL ESTATE DATA



- Rent
- Occupancy
- Cap Rates
- Broker listing data
- New construction

### DEMOGRAPHIC DATA



- School data
- Crime data
- Census data
- Mobility data
- Apartment review

### FINANCIAL DATA



- US treasury rate
- Stock market data
- Real estate loan data

# NEW DATA SOURCES

### WEB DATA



- Street View Images
- Social media
- News trends
- Clickstream data
- Advertising campaigns

### HYPER LOCATION DATA



- Cellular data
- Topological Maps
- Satellite images
- Geospatial data

### AI GENERATED DATA



- AI-generated predictions
- Multi feature clustering
- "Soon to Market" data

With this ocean of information, there emerges an astonishingly accurate ability to document trends, obtain insights, and make predictions.

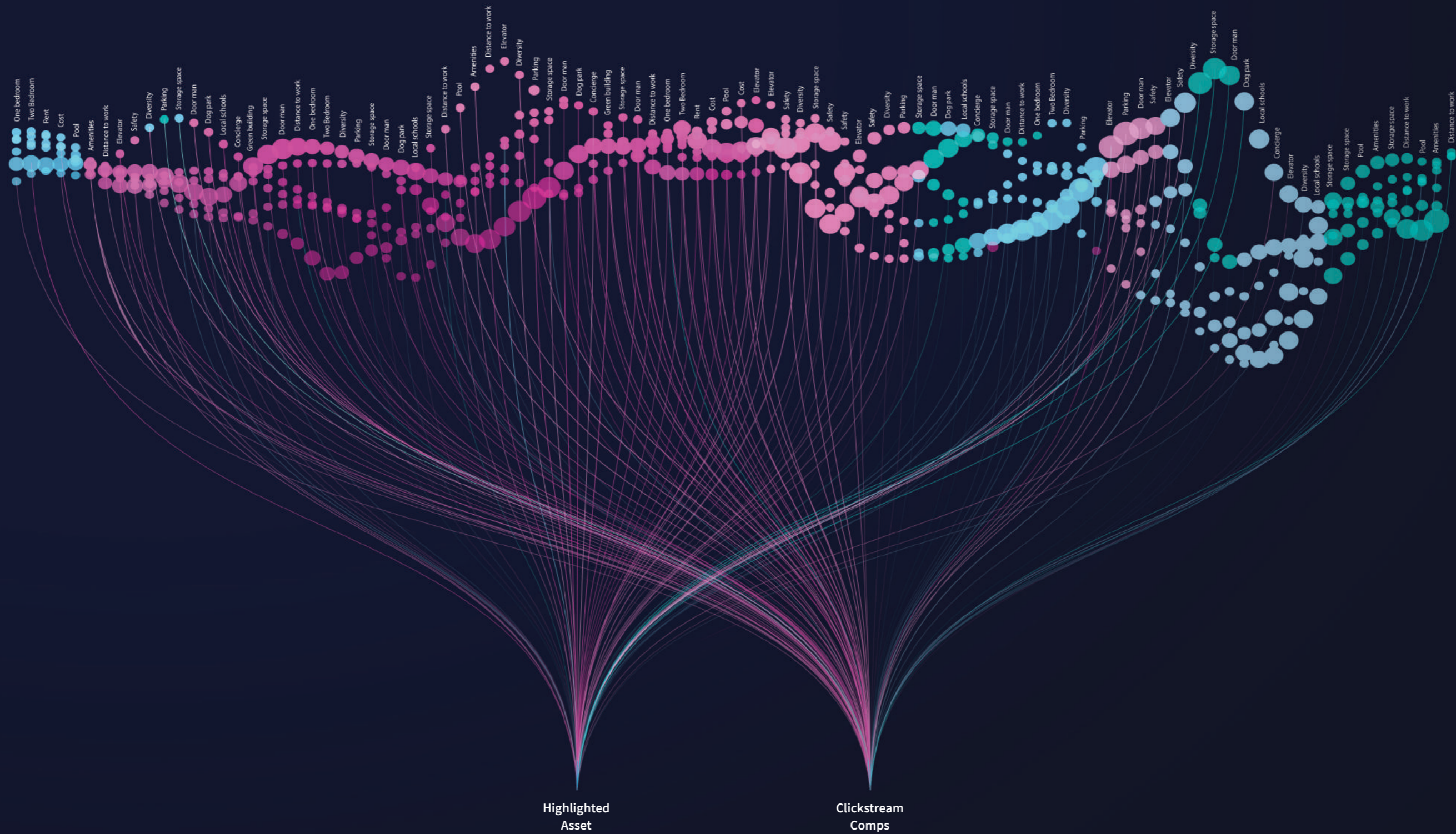
# 03

## A New Way to Think About Comps

Let's take comps, a key tool in understanding property value and relative performance. Comps, as we think of them traditionally, ignore a wealth of relevant data outside arbitrarily defined constraints -- typically only looking at properties within the immediate radius of an asset, with similar age and size.

To get a sense of just how limited the standard approach to comps can be, consider rent comps. What if, instead of looking at the vintage and unit mix of similar buildings in a given submarket, we expand our pool of comparisons by looking at the comparisons that the potential tenants themselves are making? This is possible thanks to clickstream analytics. This search engine data tells us exactly which assets potential tenants are considering in their searches. This provides previously unavailable insight into which parameters they are focusing on.

But this is just a hint of what's possible. The abundance of information available today is just the beginning. The maturation of machine learning and sheer processing power are continually enhancing our capacity for a data-driven 'bird's-eye view.' This enables ever-broadening ways to generate even more insightful comparisons for predicting asset value and performance.

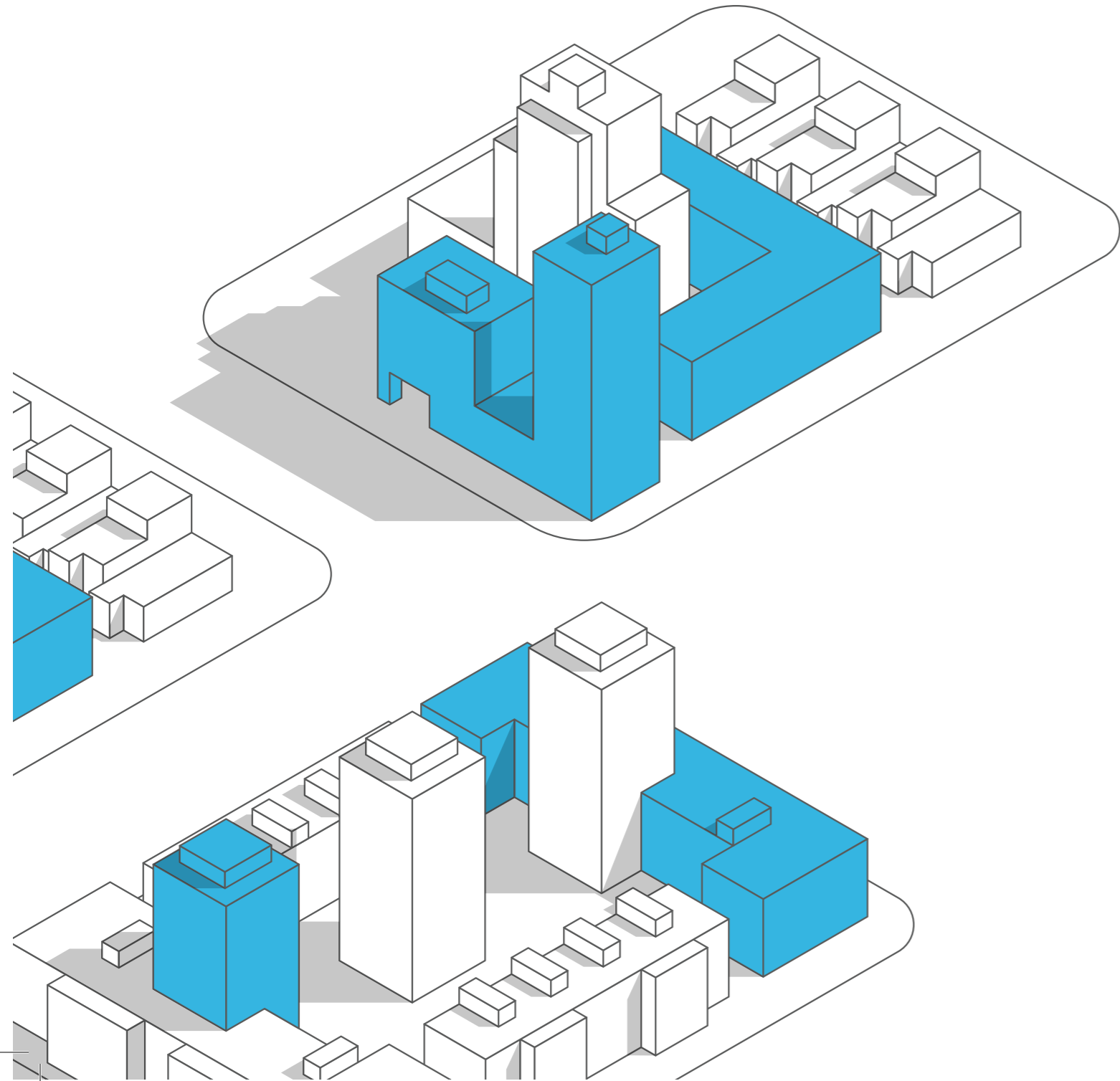


# 04

## Everything is Relevant

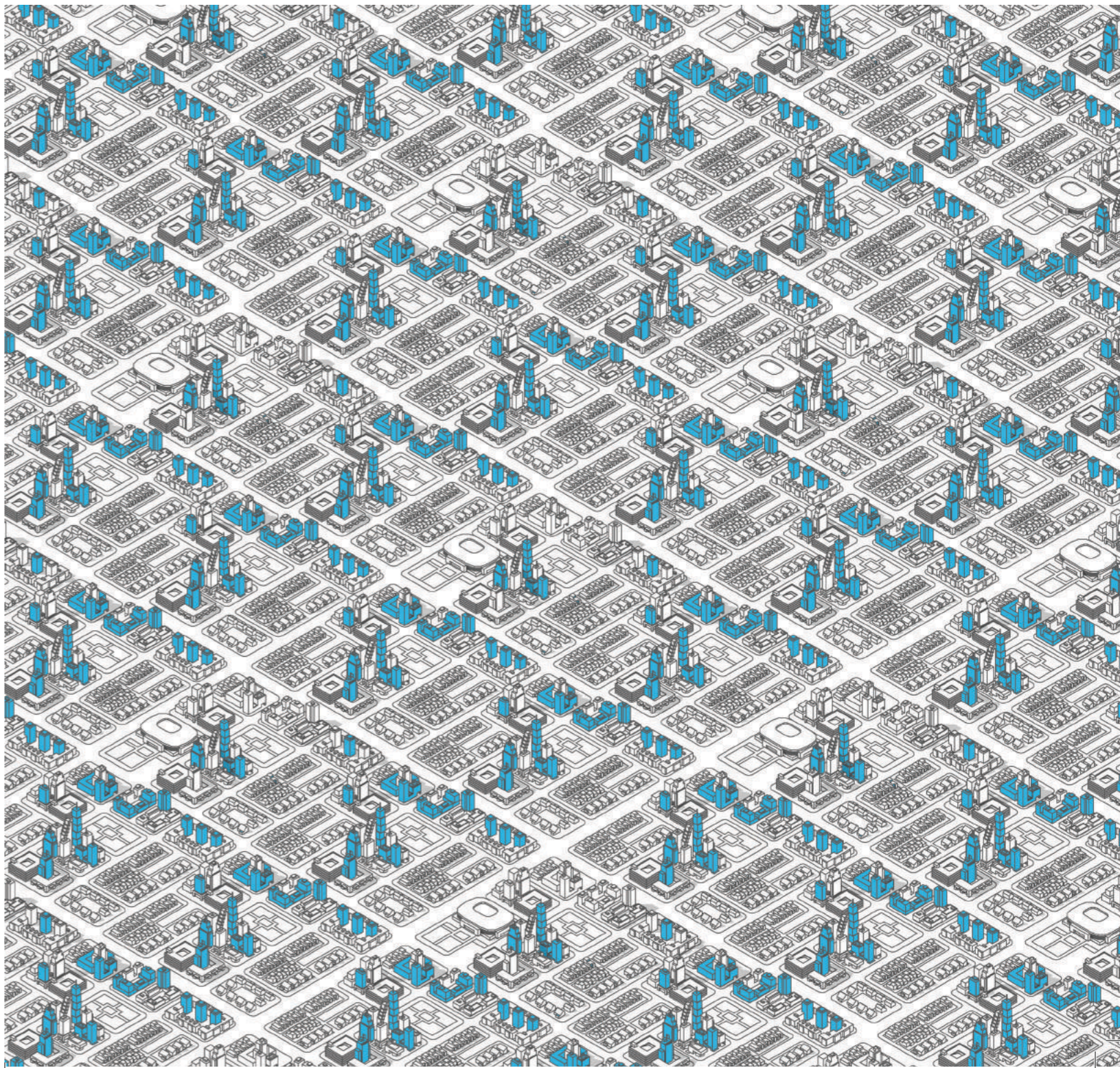
The days of focusing exclusively on assets of similar grade and age within pre-defined geographic areas are over. Using machine learning, we can now harness unsupervised learning algorithms to create a much wider reference base. The new peer group of relevant comps is much more extensive and is based on myriad deep-data points culled from wide-scope trends - even across the entire continent.

Enter Skyline Neighborhoods™. We've pulled the lens of comp analysis way, way back to include comparative data from more than 130 different sources, analyzing over 10,000 different attributes on each asset going as far back as five decades. Utilizing both supervised and unsupervised learning algorithms enables our data science teams to design and train an ensemble of machine learning models. These models form "Virtual Neighborhoods" - clusters of properties deemed similar according to thousands of different signals in the data, some of which are represented by deeply hidden correlations.



Going back to our DNA analogy, this means that instead of looking to external local factors for actionable information on the asset in question, we employ penetrative AI-based analyses far more comprehensive than conventional comp models to understand the relative importance of every single data point. We then use this information to construct an incredibly precise genetic schema of the real estate asset in question.

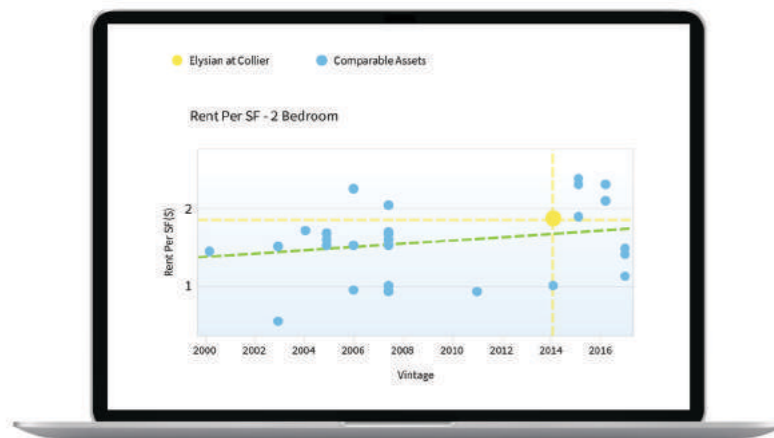
The clear benefit of vastly expanded data accumulation is having a much bigger group of similar assets as comps - which yields much higher accuracy. But this way of understanding the market also enables market trend predictions on an unprecedented scale. Finally, the idea of huge-picture market assessment has become a reality.



# 05 Artificial Intelligence Meets Concrete Application

How is this applied in real-world analyses? Starting with a preliminary comp group of nationwide assets, real estate investors can narrow down the comparison pool to a group of assets with the highest similarity to the assets in question, considering each and every feature.

**Using a traditional comp analysis**, an experienced human real estate analyst would source the usual comps and compare a few dozen similar assets. Factors such as: proximity, property class, amenities, vintage, occupancy levels, and more, are typically evaluated as a way to assess the property's current condition in terms of rent and value-add potential. Here's how that looks when applied to a particular property in Atlanta:

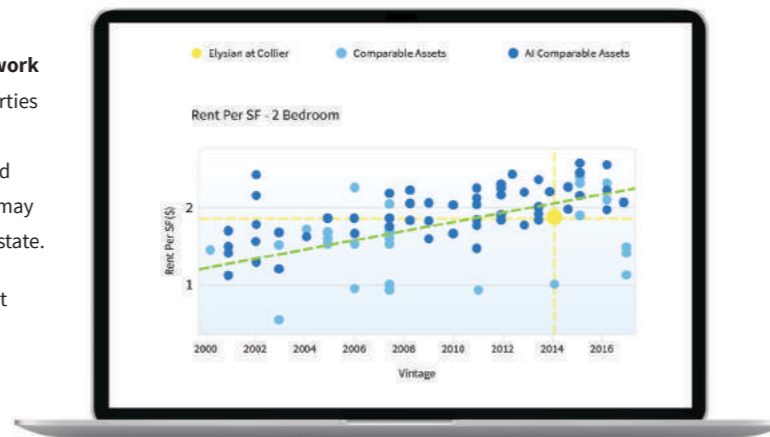


This chart shows us where our property is located compared to its peer group when looking at rent per square foot vs. year built. We constructed a grid system showing us the location of our property (the yellow dot) vs. its peer group (the blue dots).

Following a traditional comp analysis by leveraging linear regression and the resulting prediction, one may conclude that the asset is a bit more expensive than its average peer. But is that really the case?

**By letting the clustering algorithm supplement the work of a human analyst**, we add hundreds of similar properties that were discovered using machine learning for comp analysis, eliminating any potential for cognitive bias and letting the data do the work. The most relevant comps may well be on the other side of the city, or even in another state.

Using the enhanced comp set, it turns out that our asset (yellow dot) is actually below the average value, as represented by the green line:



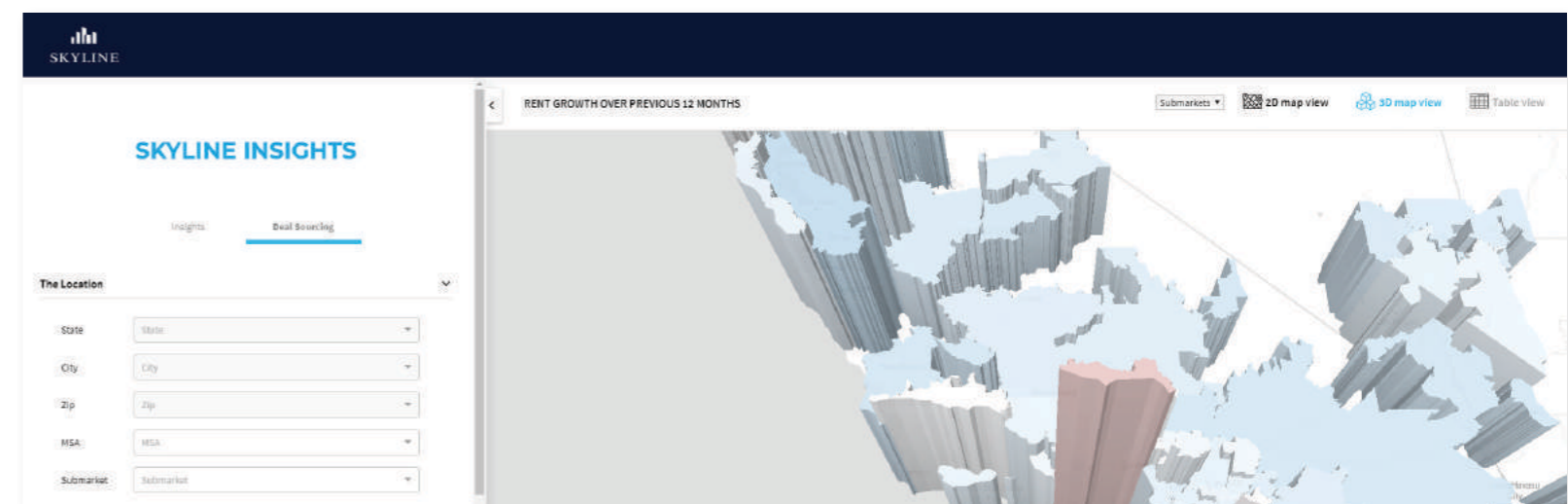
In this example we can see that by widening our MSA (Measurable Statistical Area) and leveraging an enhanced comp set constructed by AI, we were able to reach a fundamentally different conclusion with a much smaller margin of error. An asset that initially appeared as expensive to rent was actually under-occupied. The benefits of factoring every single asset enables very tangible marketplace knowledge and consequent impact on bottom line.

Using AI for underwriting purposes is just one example. There are dozens of other applications that can aid in asset management and value assessment, including perfectly timed renovation decisions, rent increases, and observing how one asset is performing compared to others of its kind.

# 06 A Complete Market Picture Emerges

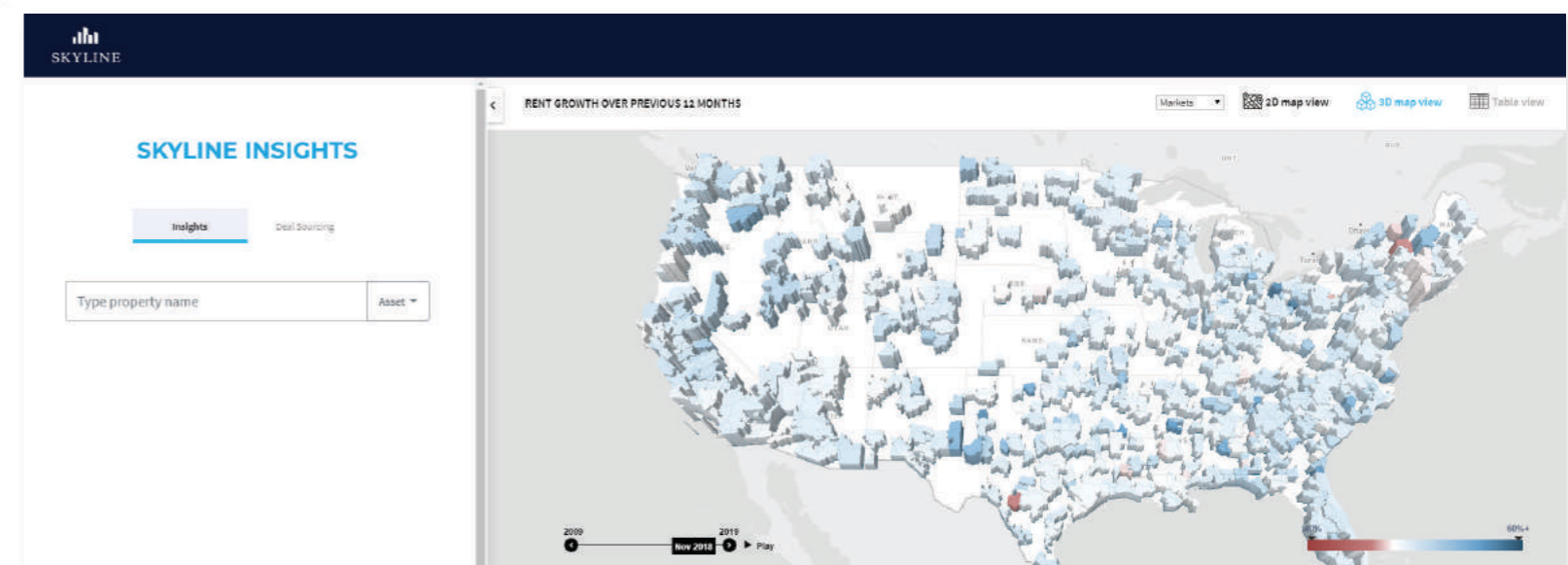
Let's pause for a moment to understand how this AI-powered analysis approach is applicable to the bigger picture and start looking at ZIP Codes, MSAs, and even entire states. All of this data can become deeply comprehensible, even considering the immensity of the task, when we have the right tools.

In a scenario where MSAs or ZIP Codes that are starting to heat up have data similarities to regions that have gone up - or down - in the past, we can make predictions on how serious the uptick is, if it will be sustained, and essentially, if it's worth investing in or holding onto. This ability to identify past patterns as a way of finding future probability on a mass scale is unprecedented. Until recently, the data processing required for these types of analyses was far beyond the scope of human ability, or any computational capacity. This is no longer the case.



Let's say, for example, that by employing these data points, you observe a growing migration of young artists and students to a certain area of Manhattan-adjacent New Jersey. What does this tell you about the area's chances of becoming the next Williamsburg?

Using advanced machine learning, it's possible to detect and monitor the medium and long-term gradual changes in the performance, demographics, migration, and urban development of markets nationwide. It's then possible to correlate them with the short-term trends of other markets - highlighting the most attractive upcoming emerging or potentially bottoming-out markets.



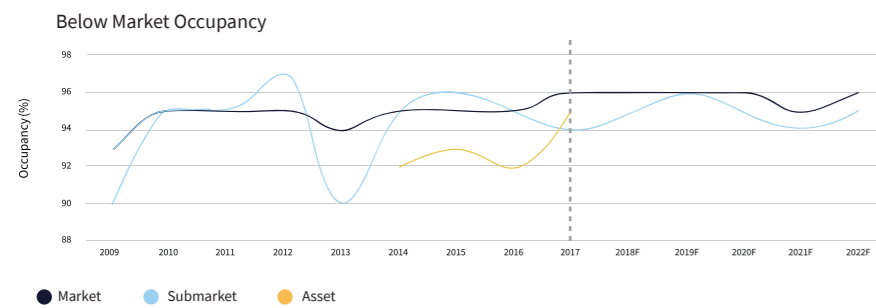
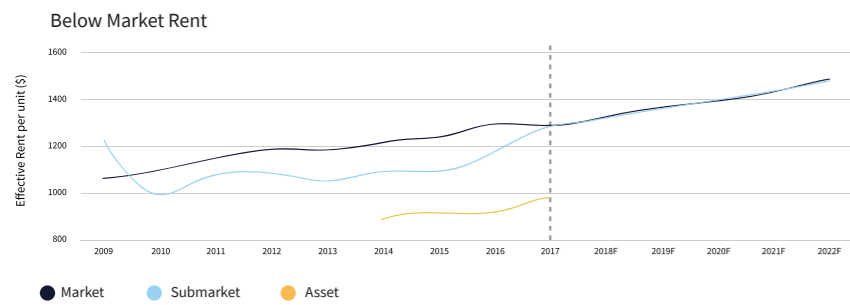
# 07 AI in Action

Here's a real-world case study showing AI's potential to deliver bottom-line value in actionable insights. Our AI platform was used to scrutinize two multi-family complexes in the Philadelphia market. Following an AI-augmented underwriting that took a mere 48 hours, we decided to acquire the portfolio for 14 percent below our analyzed market value, in an off-market deal. This case demonstrates a few advantages artificial intelligence introduces to deal sourcing and underwriting, such as identifying mismanaged properties, off-market deals, and exploiting price anomalies.

## Identifying Mismanaged Properties

By looking at variables such as rent, occupancy, loan maturity and more, we saw that the asset was performing worse than comparable assets, and as such, was likely being mismanaged.

Scanning tens of thousands of multifamily assets, our AI platform identified these assets as having lower rent and occupancy than their immediate comparables. They were therefore flagged as a possible investment candidate.



## Exploiting Price Anomalies

The platform also determined a target price that was significantly above the asking price for the two assets:

**\$24.4**  
million portfolio value  
(AI-generated)

**\$21**  
million actual purchase  
price (off-market)

**14%**  
discount

Skyline AI's platform determined that the properties' asking price was 14% lower than the actual market value of the asset (as previously predicted by our AI).

In the image, we see an Anomaly Detection Example - for spotting arbitrage. The platform highlights assets with an asking price below the AI market value prediction.

Asset Name	Bidder	Requested Price	Predicted Price	Gap
22 Bradford Avenue	JLL	\$26.6M	\$25.6M	24%
216 W 14th Street	JLL	\$40M	\$45.3M	13%
242 West 120th Street	JLL	\$24.2M	\$28.2M	10%
3301 SE	JLL	\$12.2M	\$25.4M	5%
43rd Ave	JLL	\$34.34M	\$35.1M	4%
Berkeley Ave	JLL	\$23.3M	\$25.6M	4%

