



Know your enemy

A survey of fraud prevention in real estate

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Real estate fraud

Title Fraud

- The ownership (i.e. title) of the property is fraudulently changed

Identity Theft (Deed Theft)

- Fake ID, property documents

Mortgage Fraud

- Deliberate misrepresentation of information to obtain mortgage financing



Deed theft

- a type of identity theft
- potential home to target
 - — often a second home, rental, vacation home or vacant house
- forges the true owner's signature
 - “sell” it to themselves or a third party such as a trust



Rental Scams

- Phantom Rentals
 - An ad for a place that does not exist or is not for rent
- Bait-and-Switch
 - The landlord tries to get you to sign a lease or collect a deposit for a different property than the one advertised
- Hijacked Ads
 - A fake landlord posts an ad for a real place, with altered contact information
 - collect deposits or rent for properties they don't own



Fraud in Listing Services

- Deceptively photoshopped images
- AI-generated descriptions
- Misrepresentations in listings



Fraud Prevention is basically anomaly detection

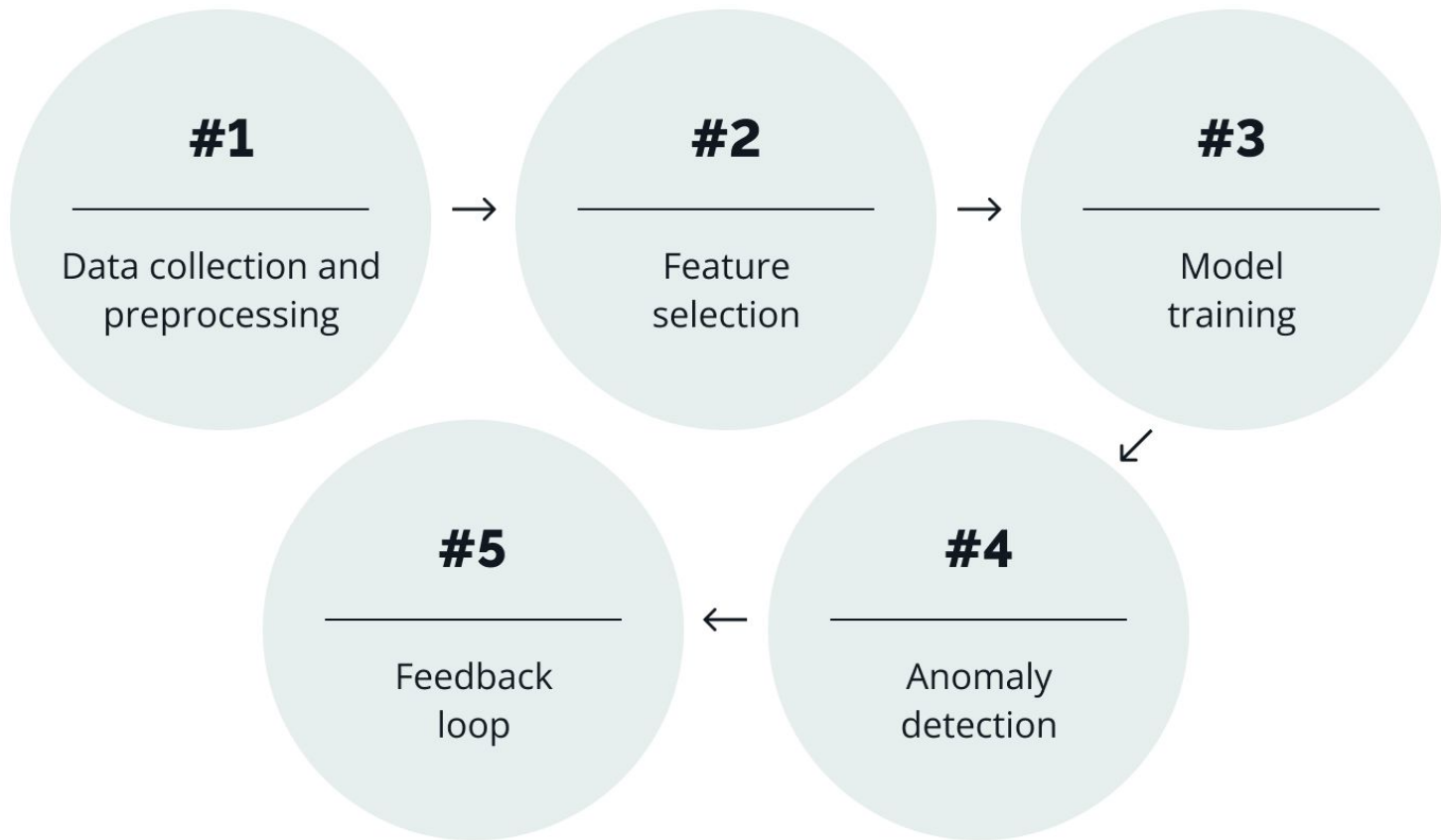
11,727 individuals in the US were victims of real estate fraud.

a tiny percentage of the roughly 87 million homes owned in the US

— [FBI's 2022 Internet Crime Report](#)



AI Anomaly Detection Process





Types Of Anomalies

Point
anomalies

Contextual
anomalies

Collective
anomalies



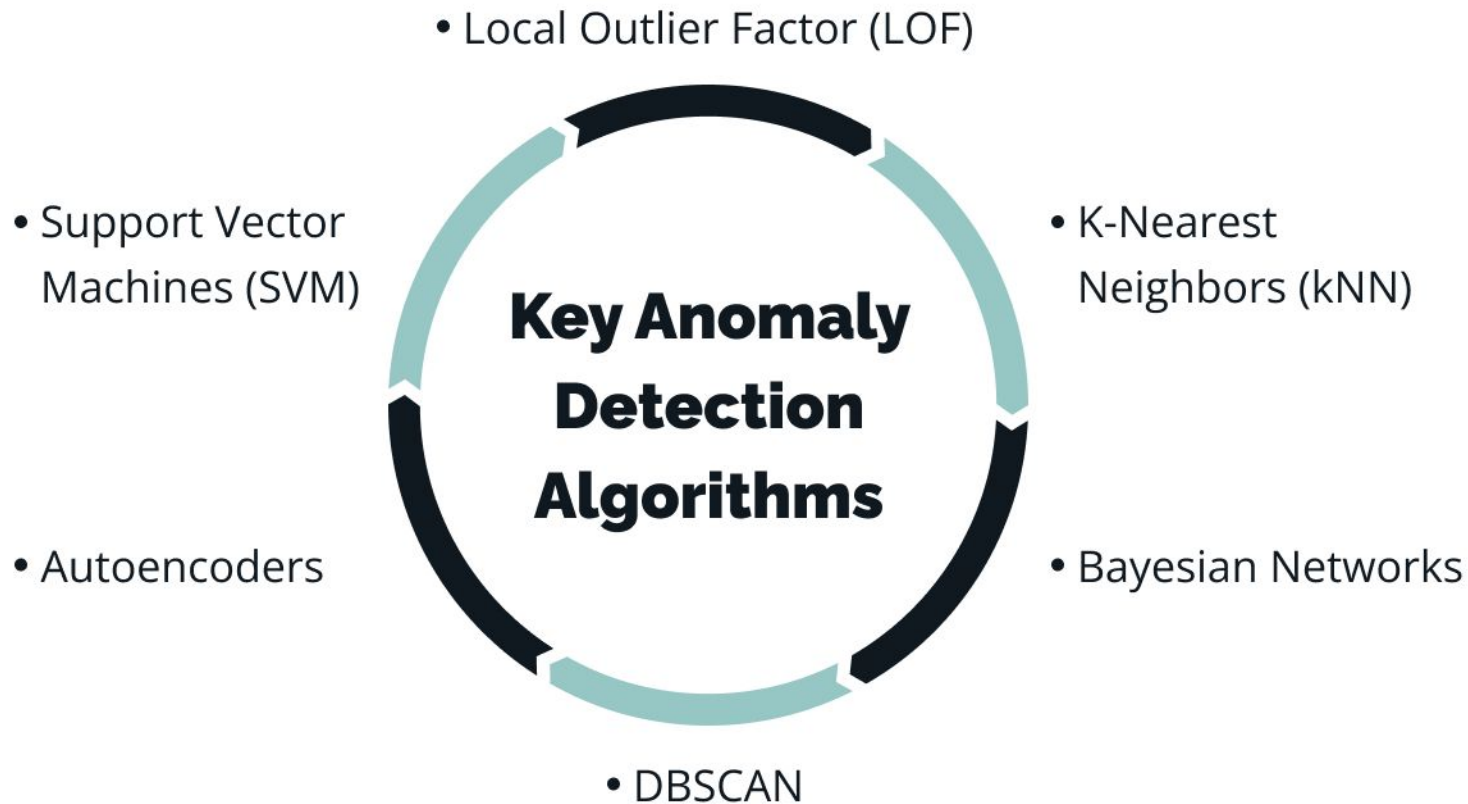
Advances in machine learning

deep learning and neural networks

autoencoders and generative adversarial networks (GANs)

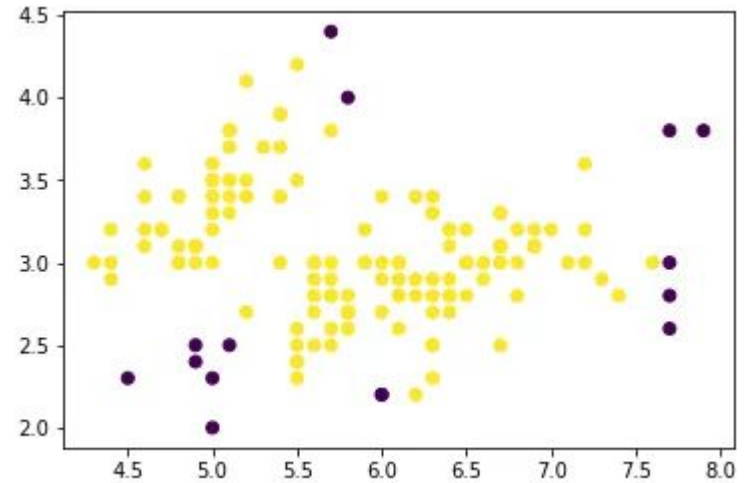
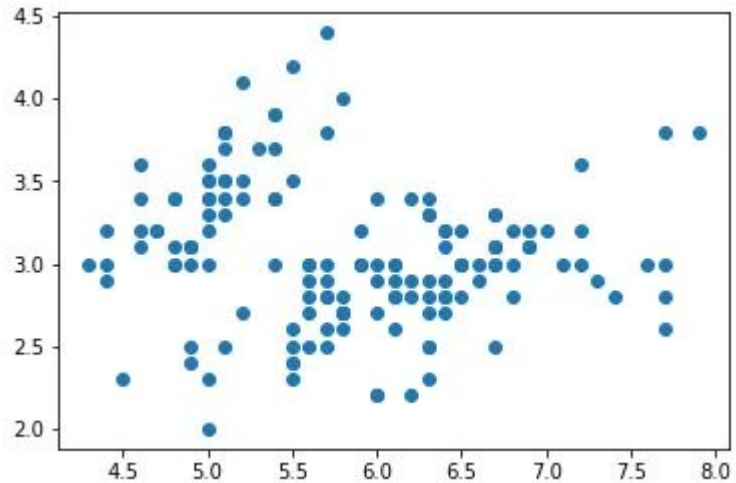
Autoencoders can learn to compress and then reconstruct input data, flagging reconstructions that significantly differ from the original as anomalies

GANs can be used to generate synthetic data for training, which improves the ability to distinguish between normal and anomalous patterns

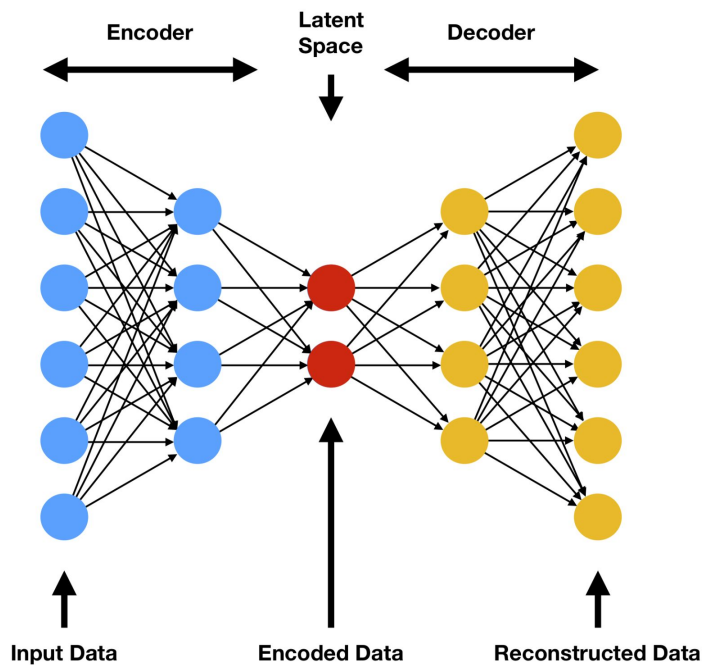




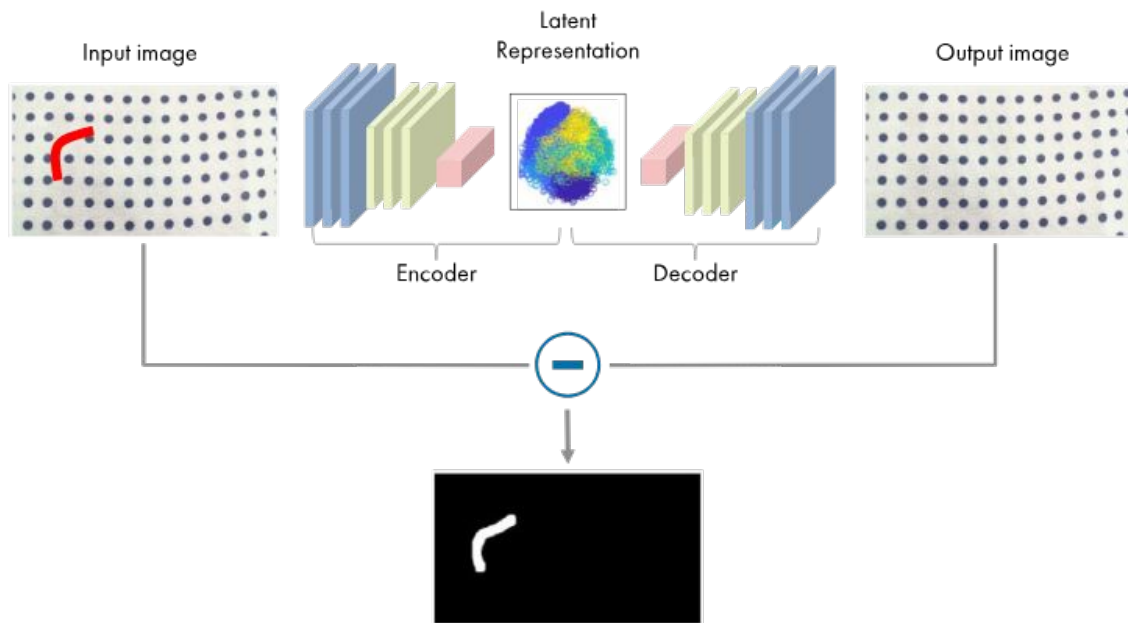
DBSCAN: Density-Based Spatial Clustering of Applications with Noise



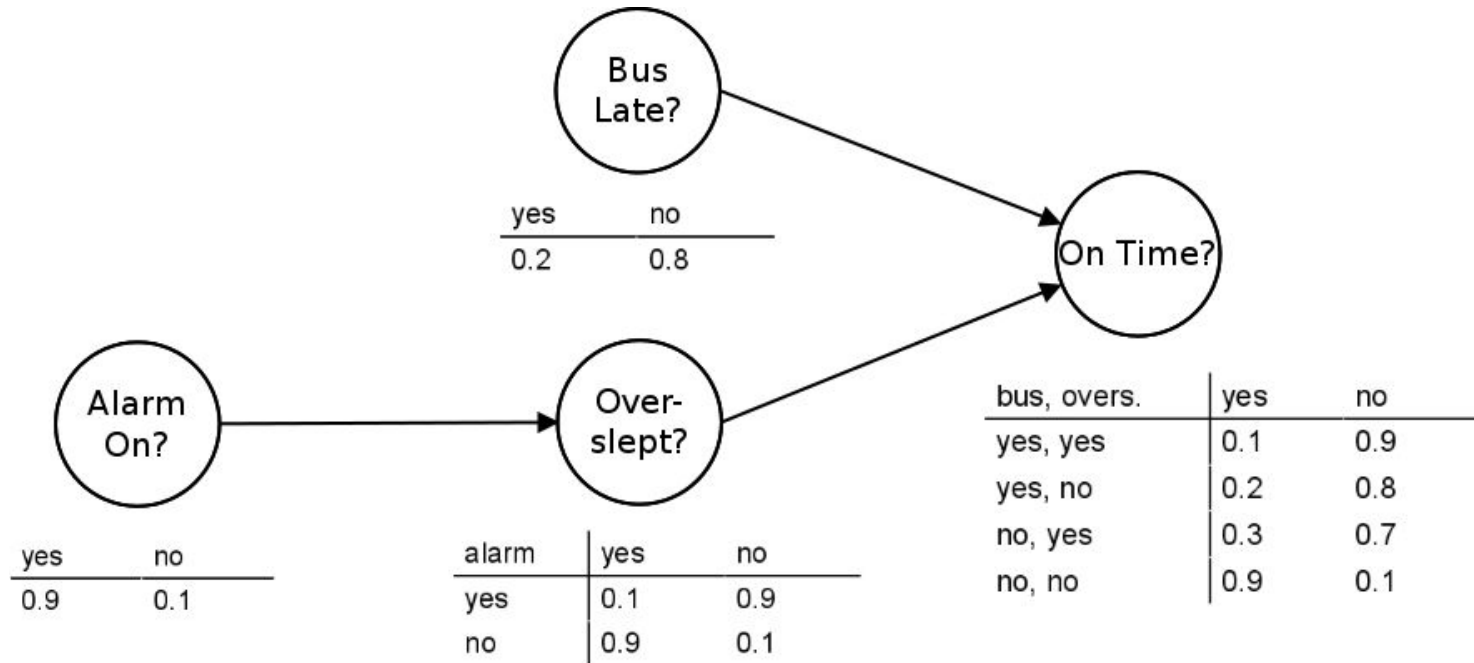
Autoencoders



Denoising Autoencoders



Bayesian Network





Invisible Digital Watermark

a unique identifier embedded into content like videos, images, or electronic documents



User/Document Screening

fake identities

income verification discrepancies

criminal records