



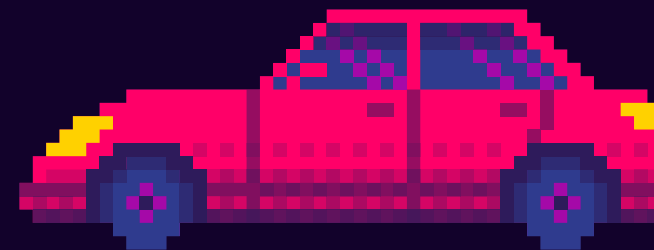
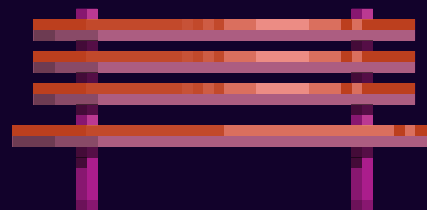
DETECCIÓN DE FRAUDE CON SERIES DE TIEMPO, MACHINE LEARNING Y PYTHON

 **ApiMarket.**

 @ChallierJr

 Carlos Sanchez Explica

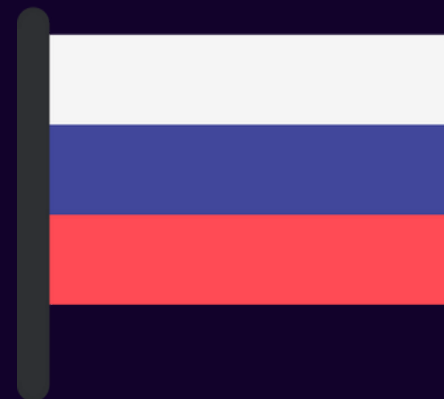
BLACKBOX



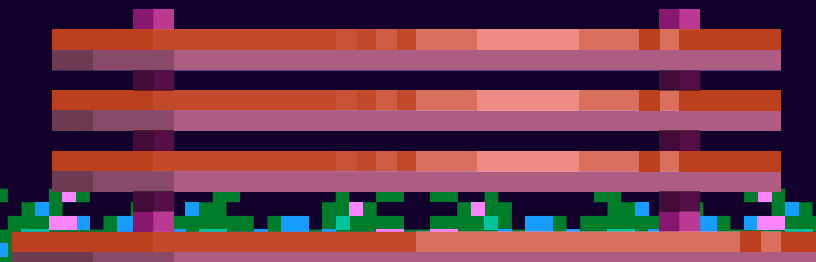
SITUACIÓN 1



8 PM



10 PM



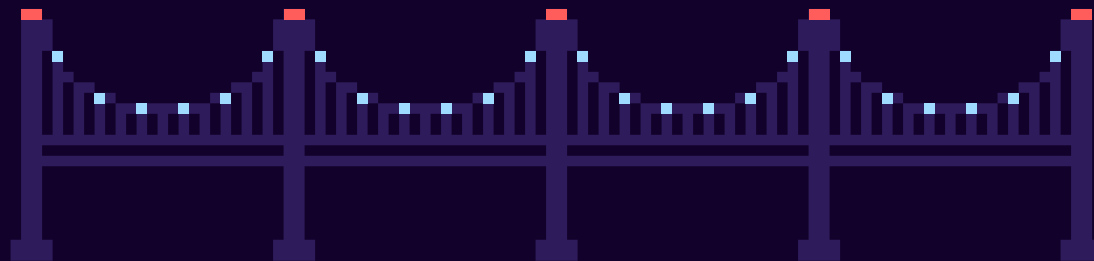
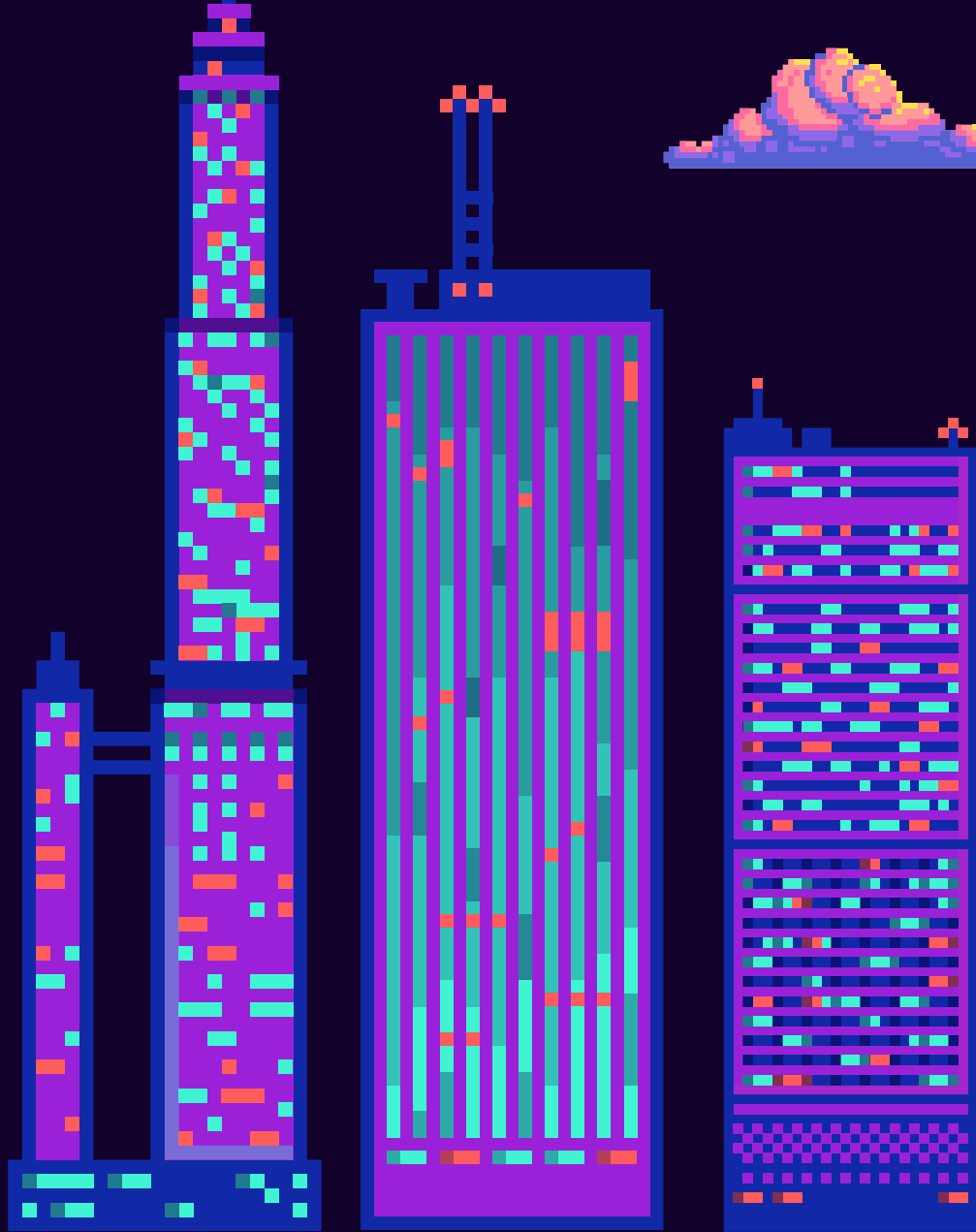
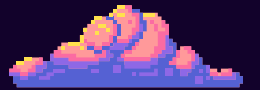
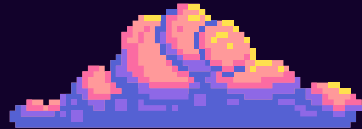
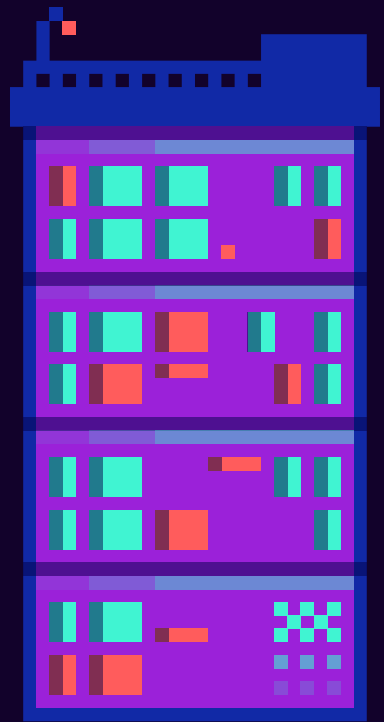
SITUACIÓN 2



LUNES 10 PM



MIÉRCOLES 6 AM



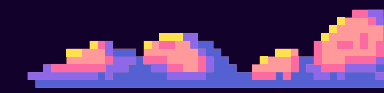
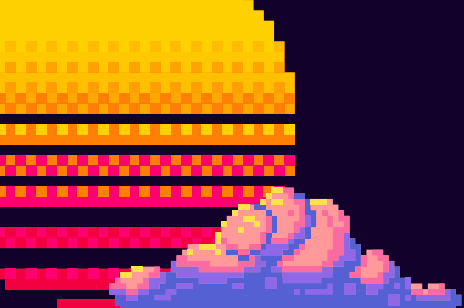
ANOMALÍA

01 ATÍPICO

02 NO ESPERADO

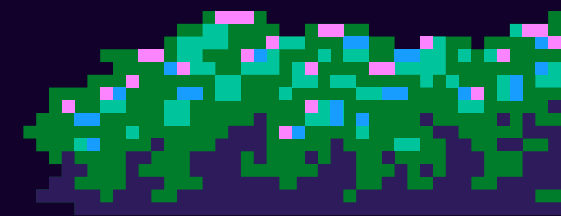
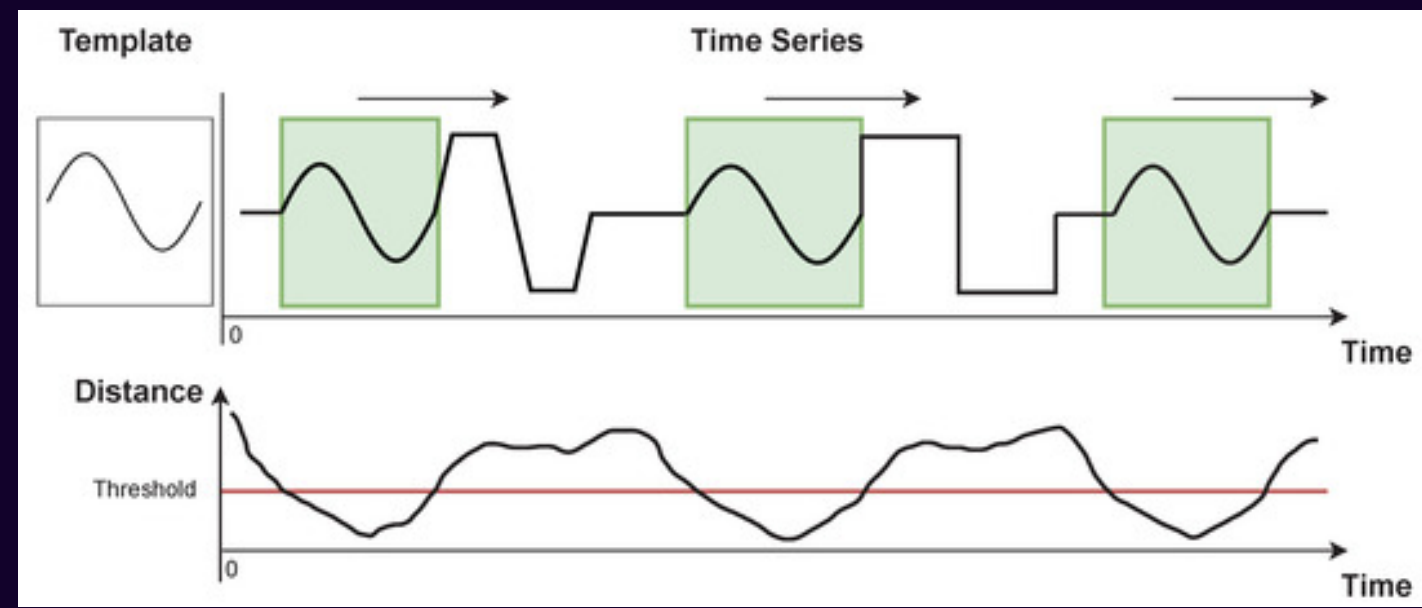
03 INUSUAL

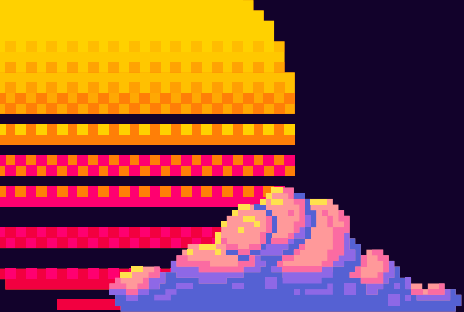




ANOMALY DETECTION

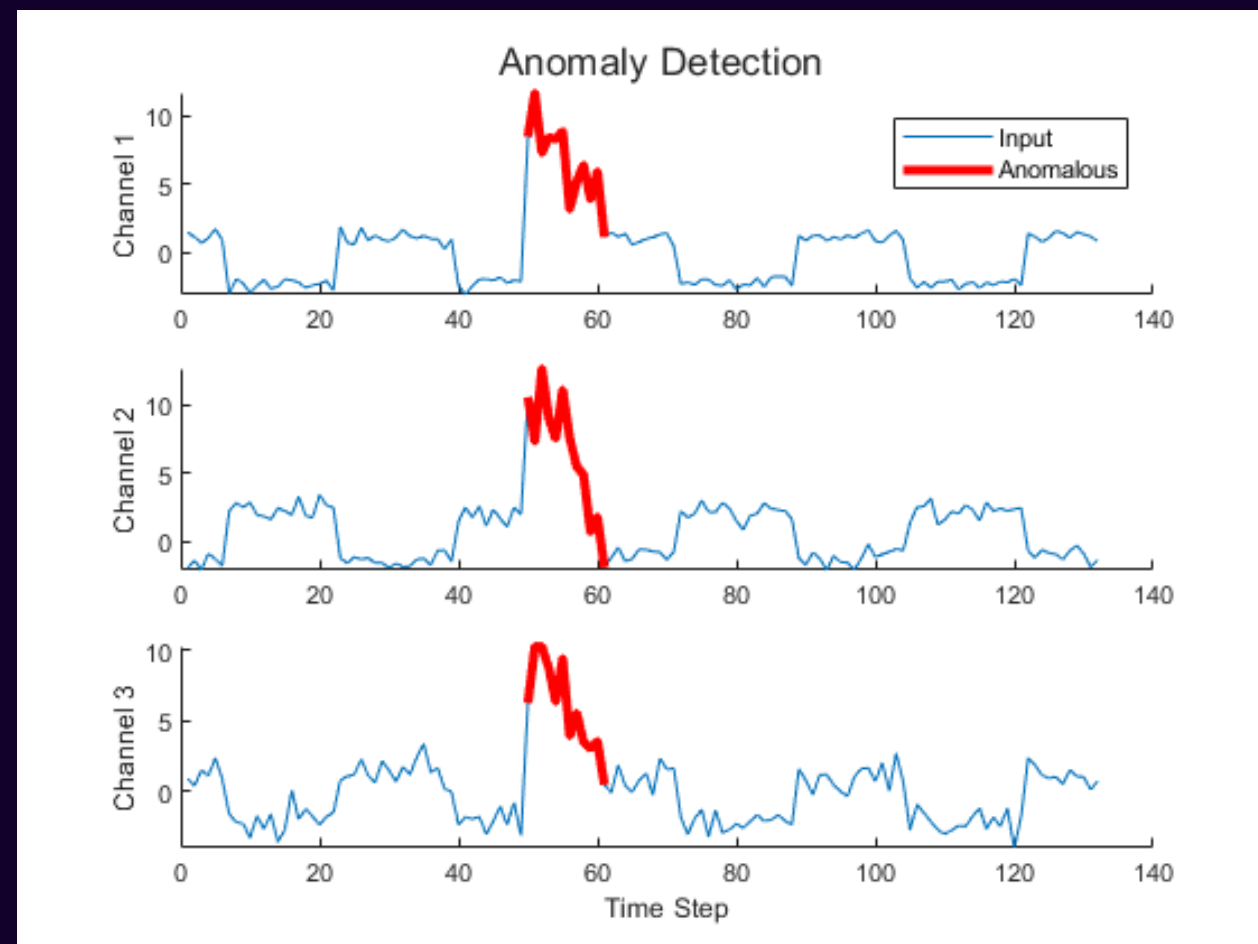
ANOMALY DETECTION

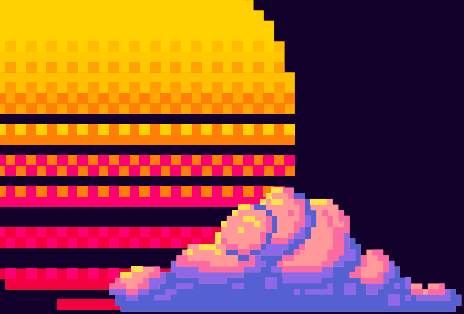




ANOMALY DETECTION

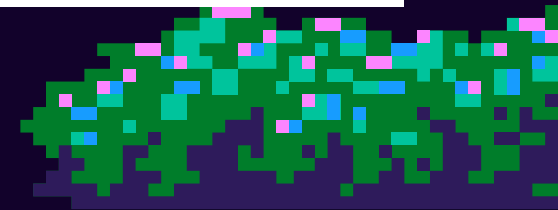
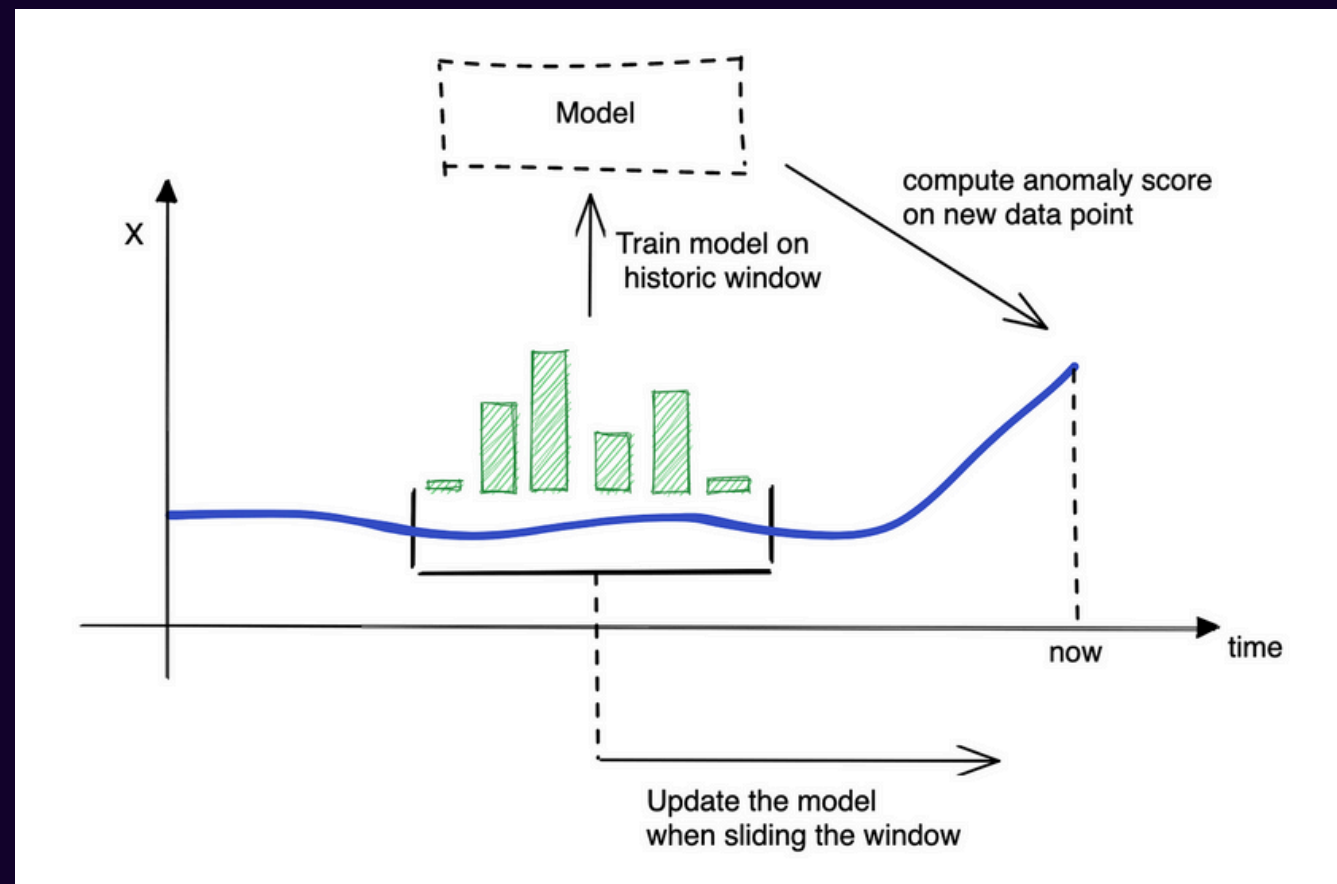
ANOMALY DETECTION





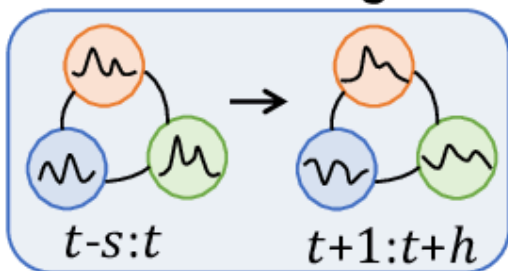
AI TUTOR

REAL-TIME LEARNING

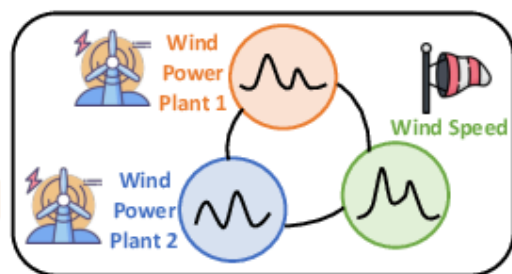
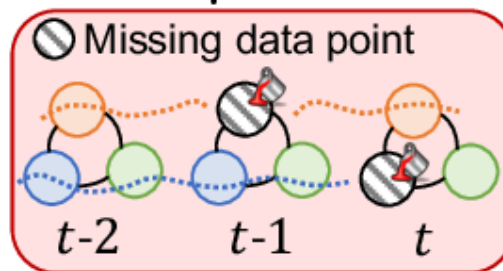


GRAPH + TIME SERIES

Forecasting



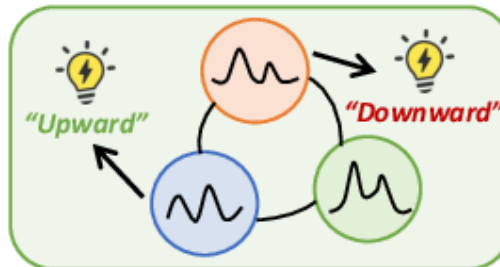
Imputation



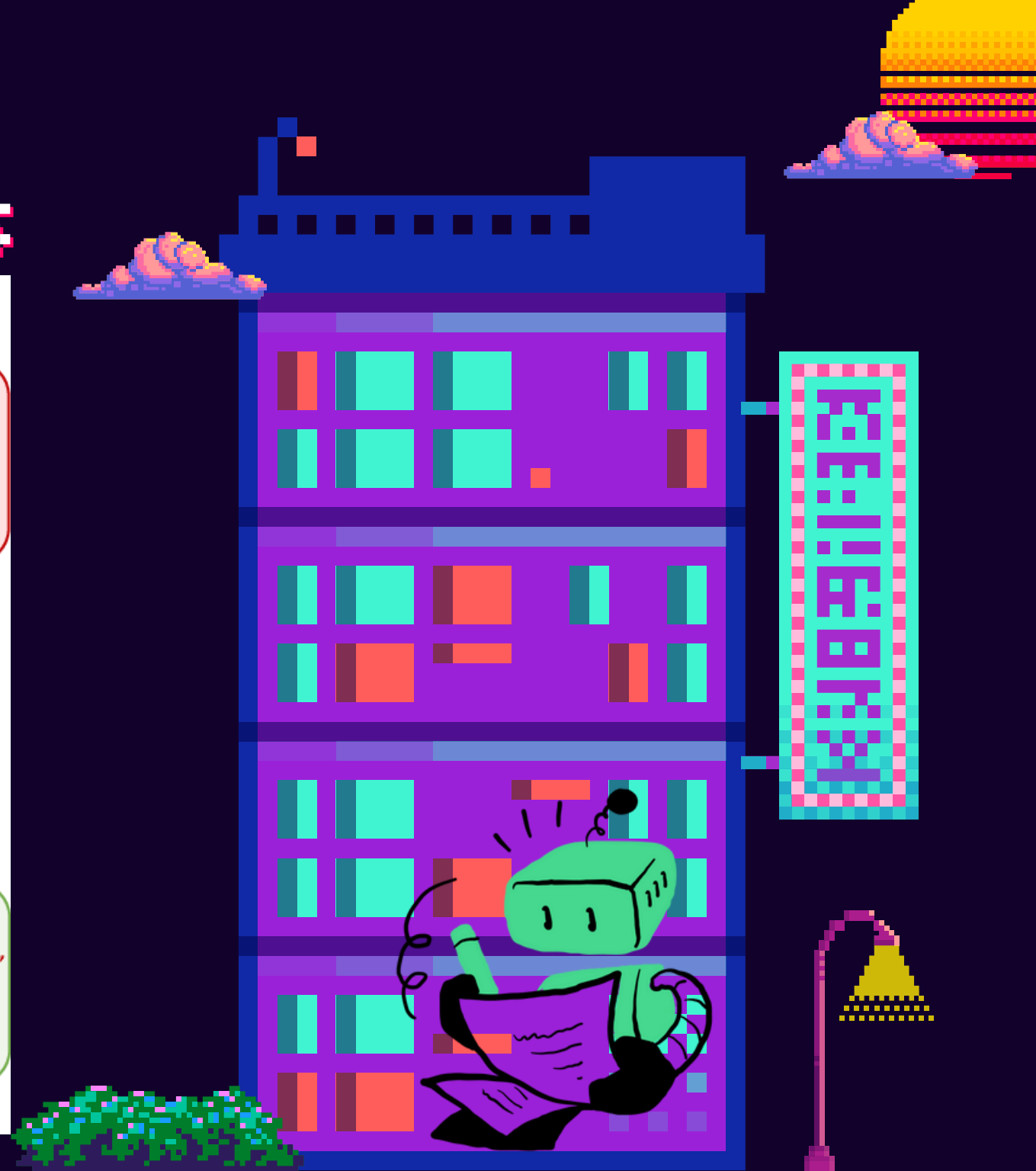
✗ Anomaly Time Point



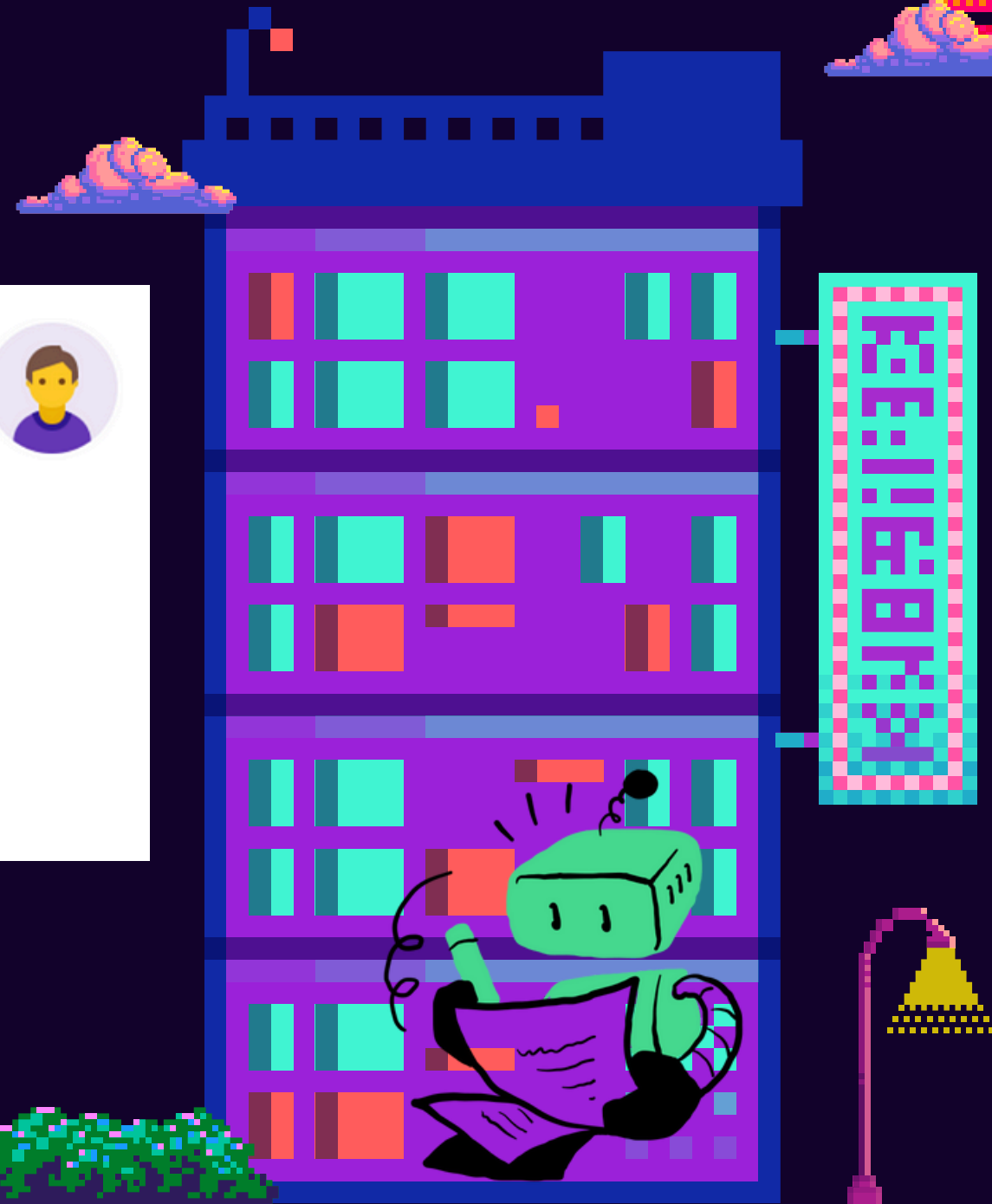
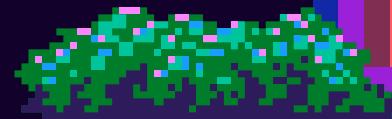
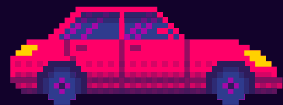
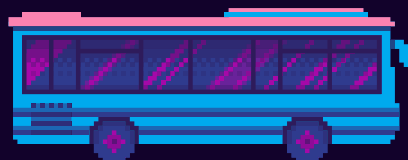
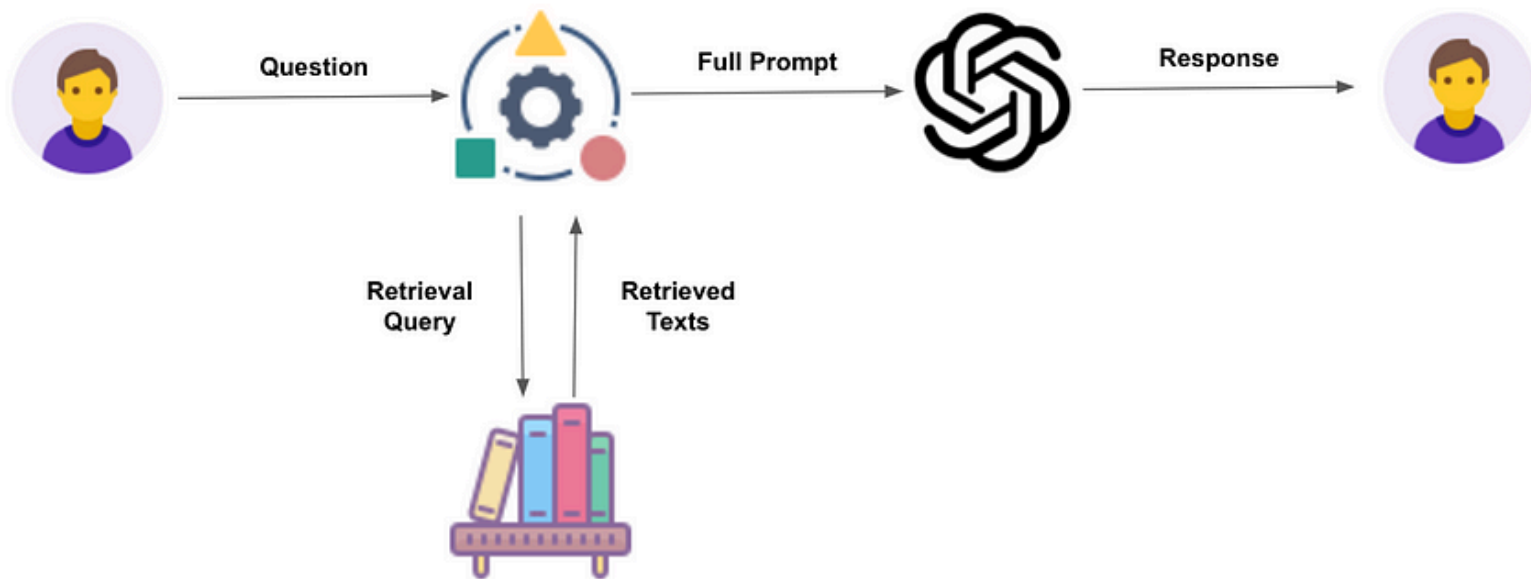
Anomaly Detection

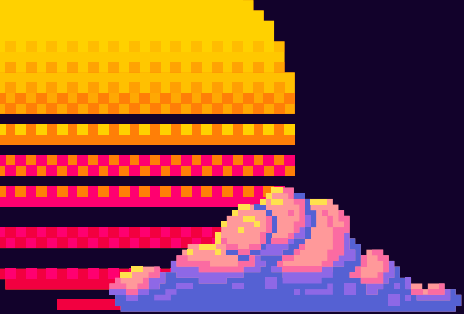


Classification

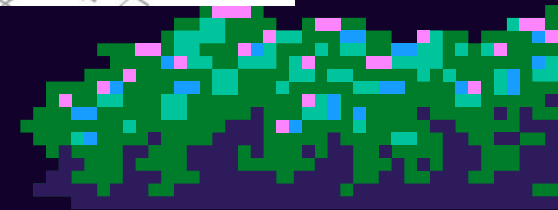
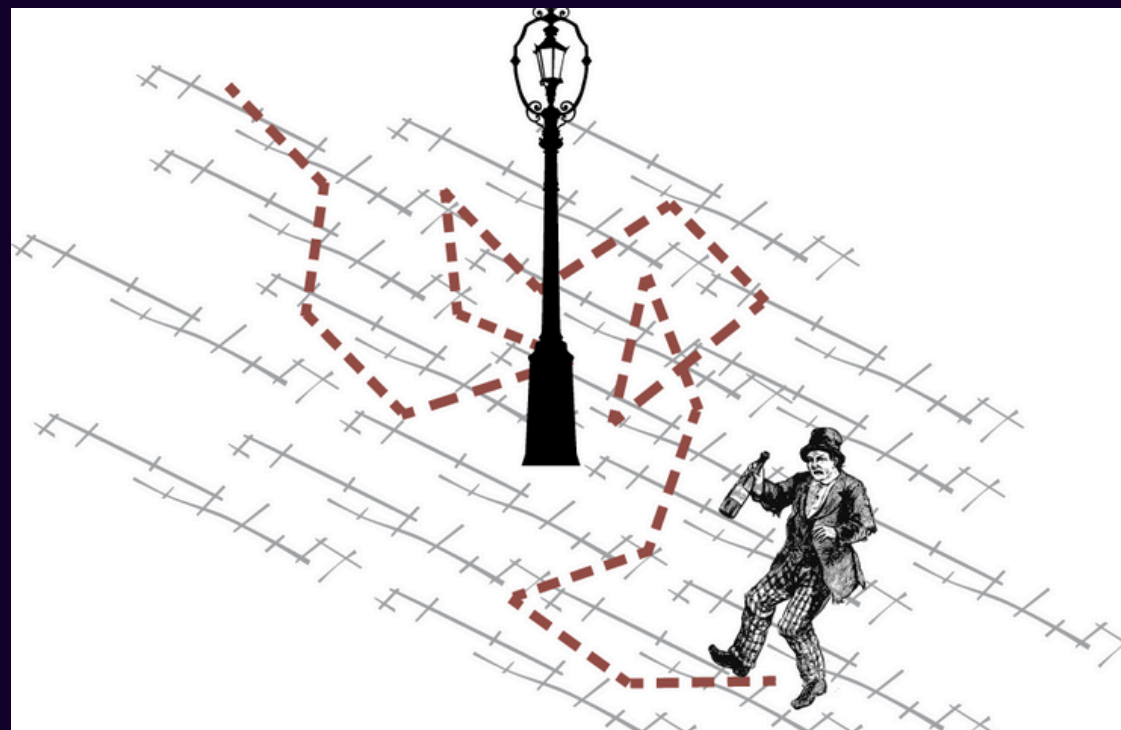


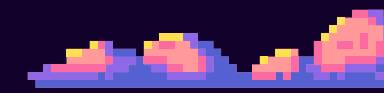
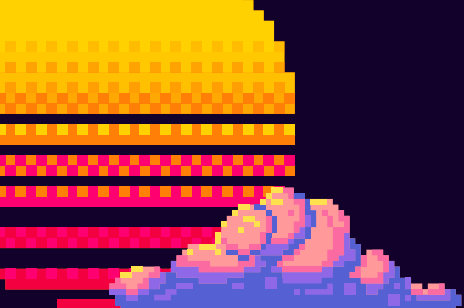
APPLICATION RAG



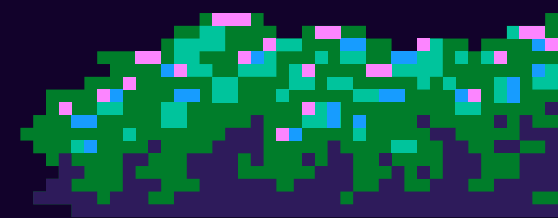
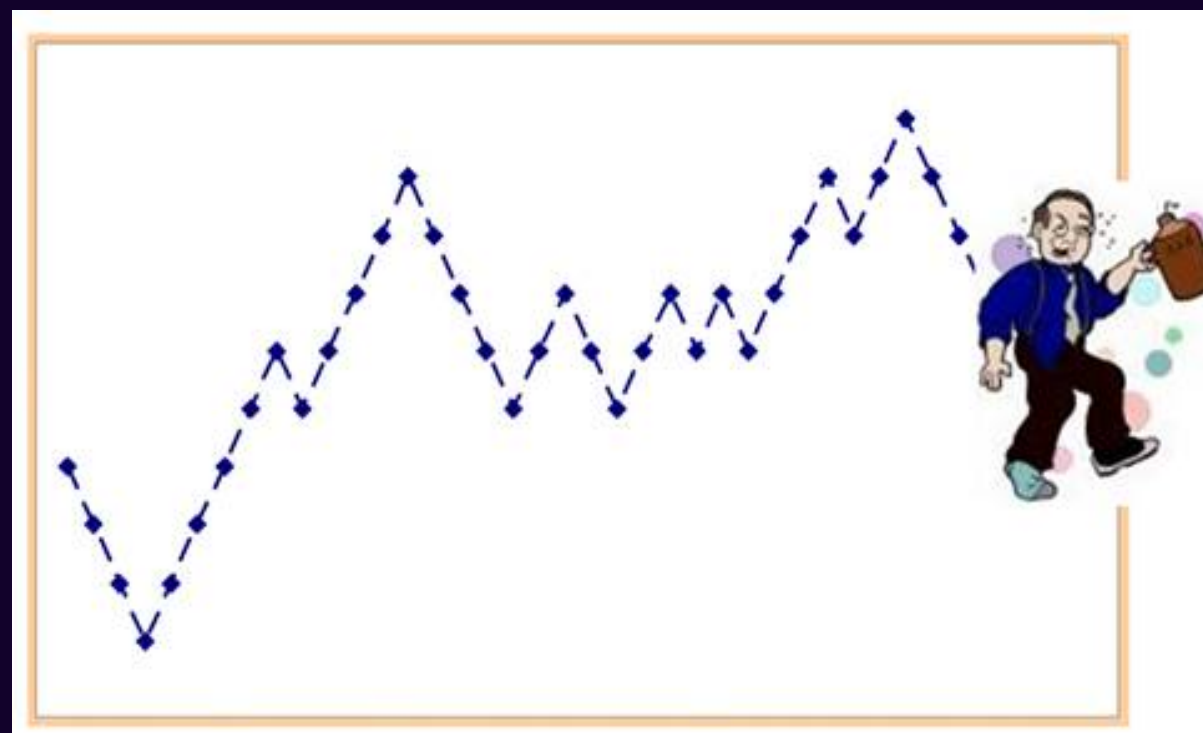


¿QUÉ ES UNA SERIE DE TIEMPO?

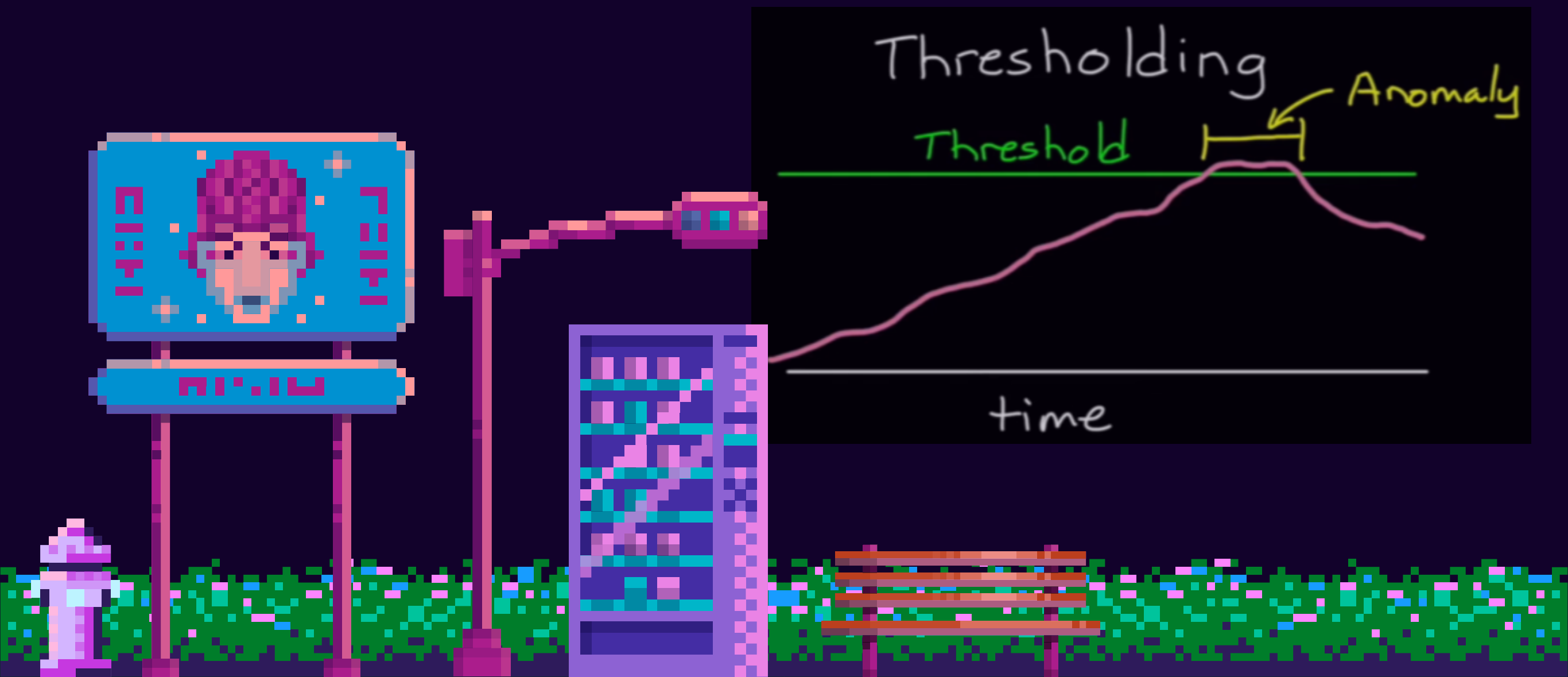




¿QUÉ ES UNA SERIE DE TIEMPO?



TS ANOMALY DETECTION

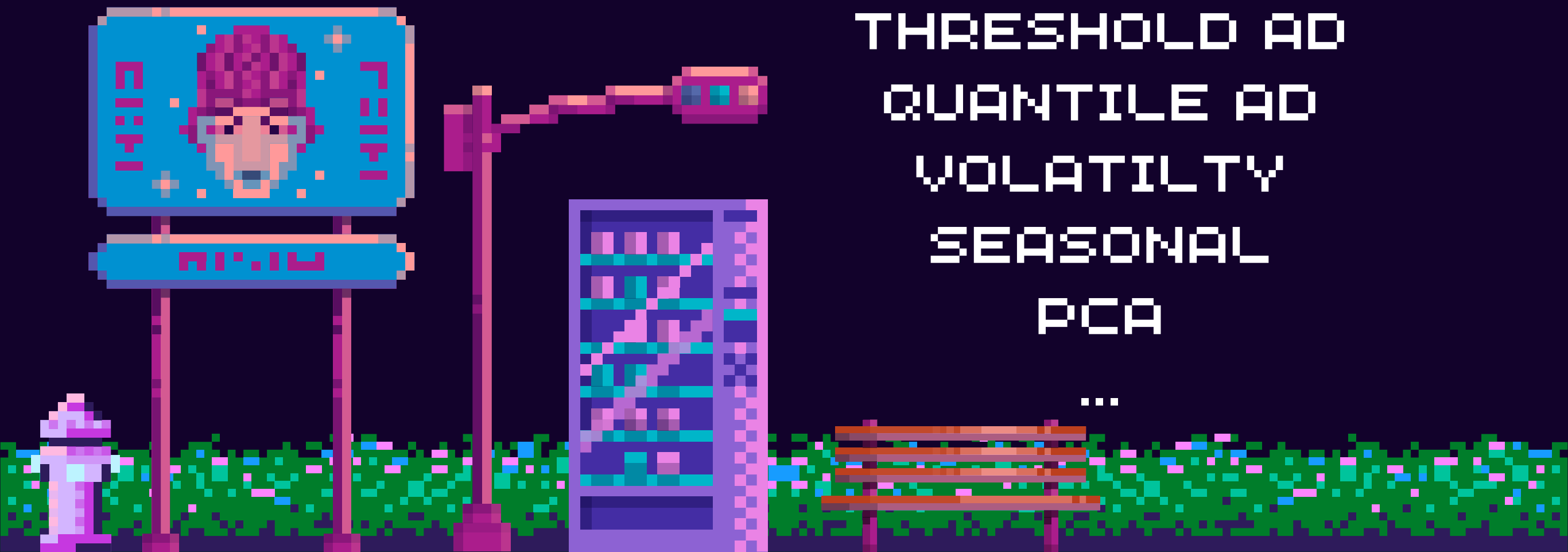


TS ANOMALY DETECTION

ANOMALY DETECTION TOOLKIT (ADTK)

THRESHOLD AD
QUANTILE AD
VOLATILITY
SEASONAL
PCA

...



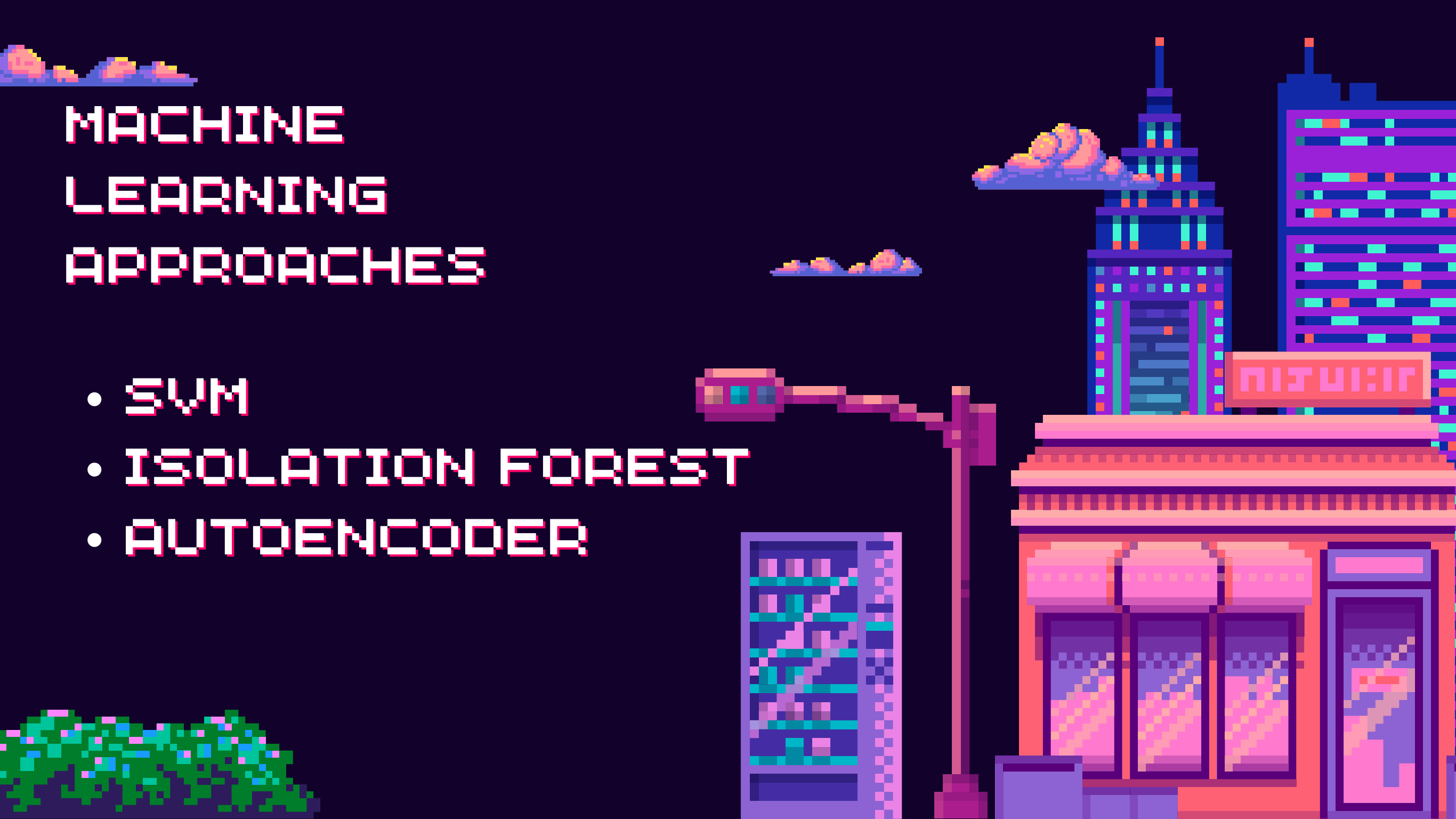
ANOMALY DETECTION TOOLKIT (ADTK)

```
from adtk.detector import ThresholdAD
threshold_ad = ThresholdAD(high=30, low=15)
anomalies = threshold_ad.detect(s)
```



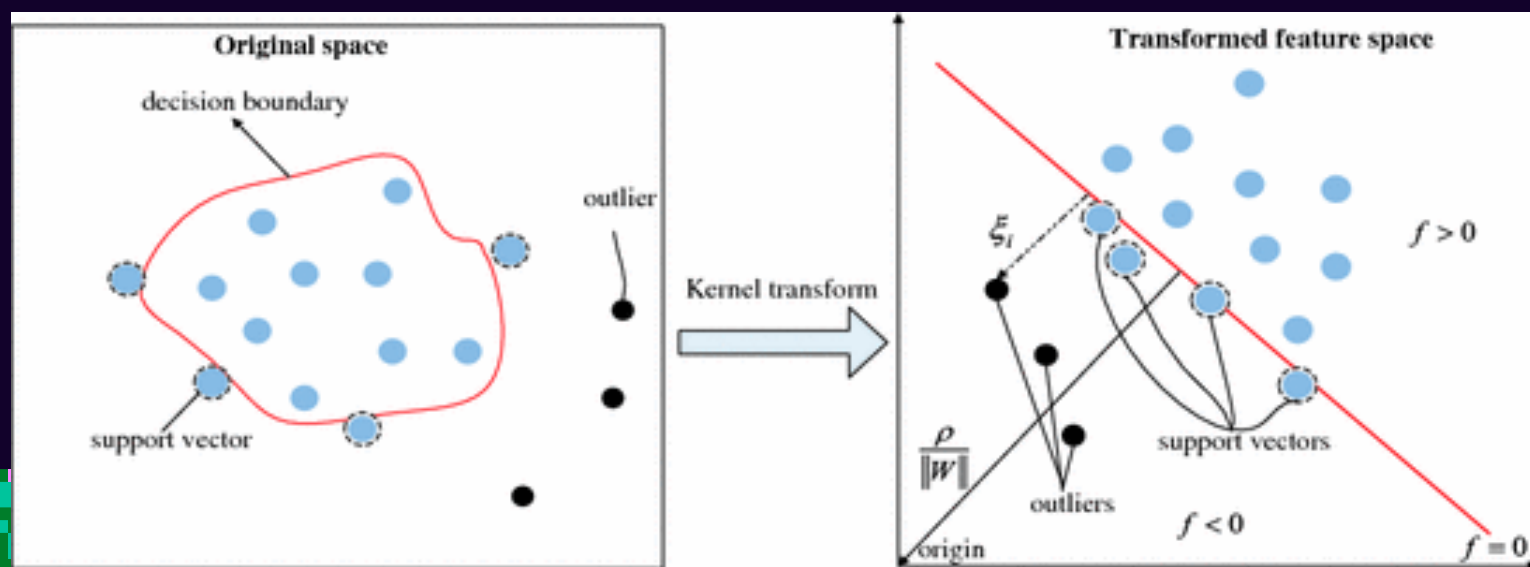
MACHINE LEARNING APPROACHES

- SVM
- ISOLATION FOREST
- AUTOENCODER



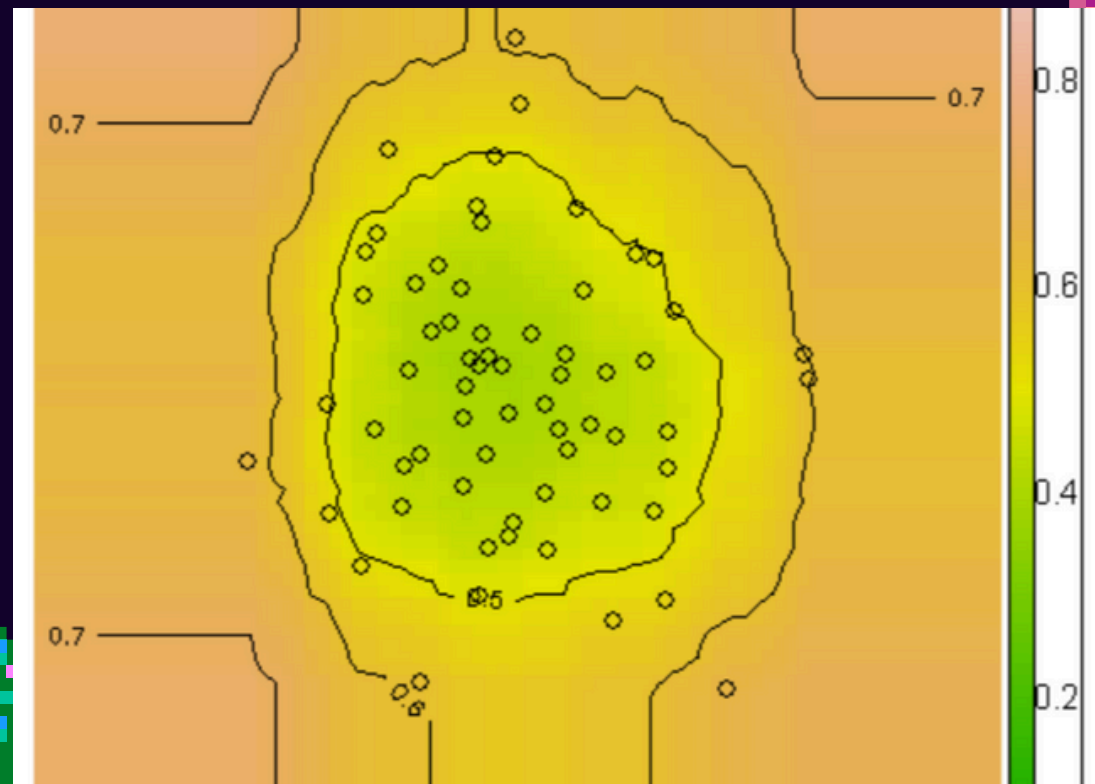
MACHINE LEARNING APPROACHES

- SVM



MACHINE LEARNING APPROACHES

- ISOLATION TREE



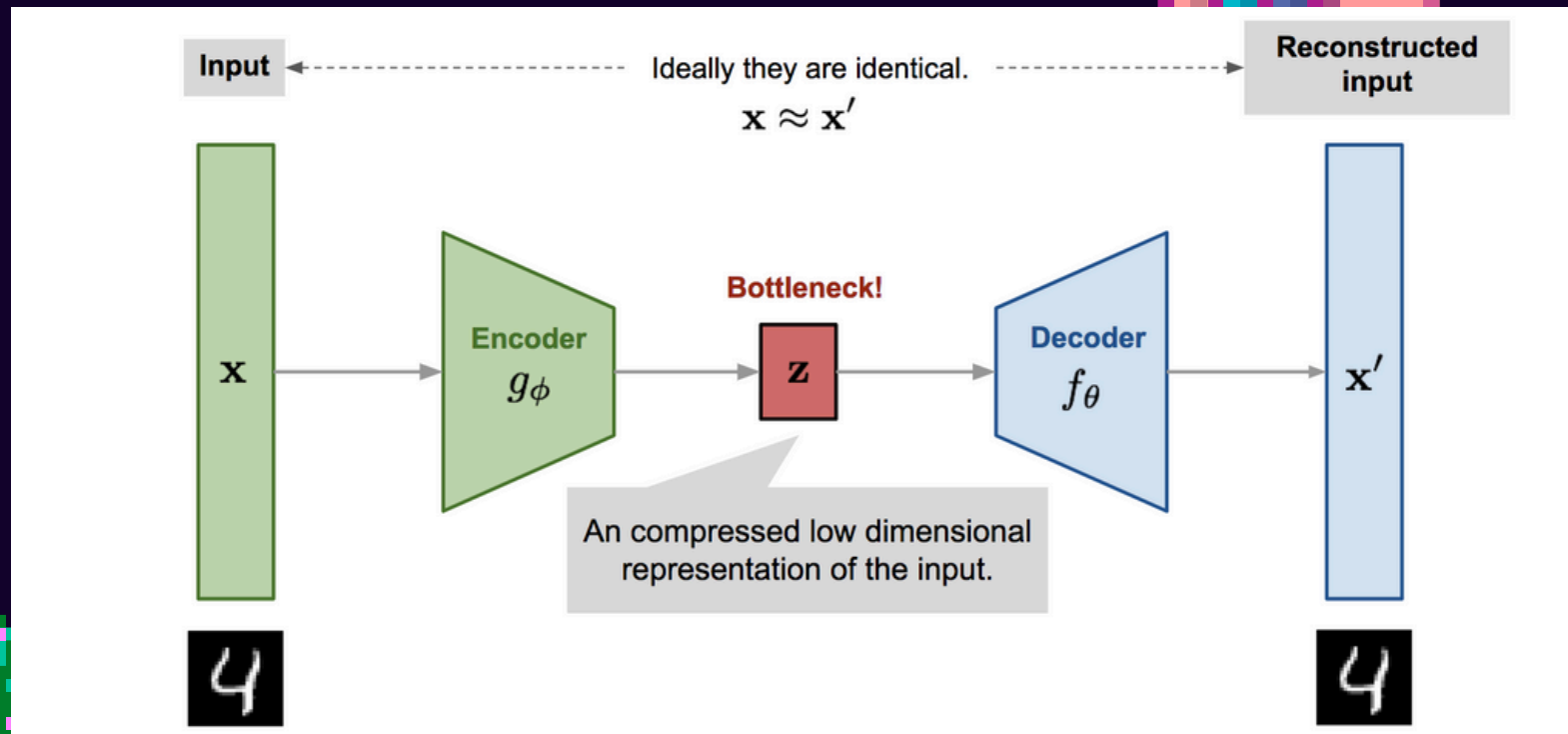
Isolation Forest

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MACHINE LEARNING APPROACHES

- AUTOENCODERS





DEAD TIME

PROJECT

AEON (PYTHON)

CREDIT CARD

FRAUD

DETECTION

DATASET

github.com/sanchezcarlosjr/jaulacon2024-anomaly-detection

[24-anomaly-detection](https://github.com/sanchezcarlosjr/jaulacon2024-anomaly-detection)



CONCLUSIONES

LOS LLMS NO
SOPORTAN TS

TS AYUDAN A
TOMAR
DECISIONES EN
TIEMPO REAL



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PREGUNTAS