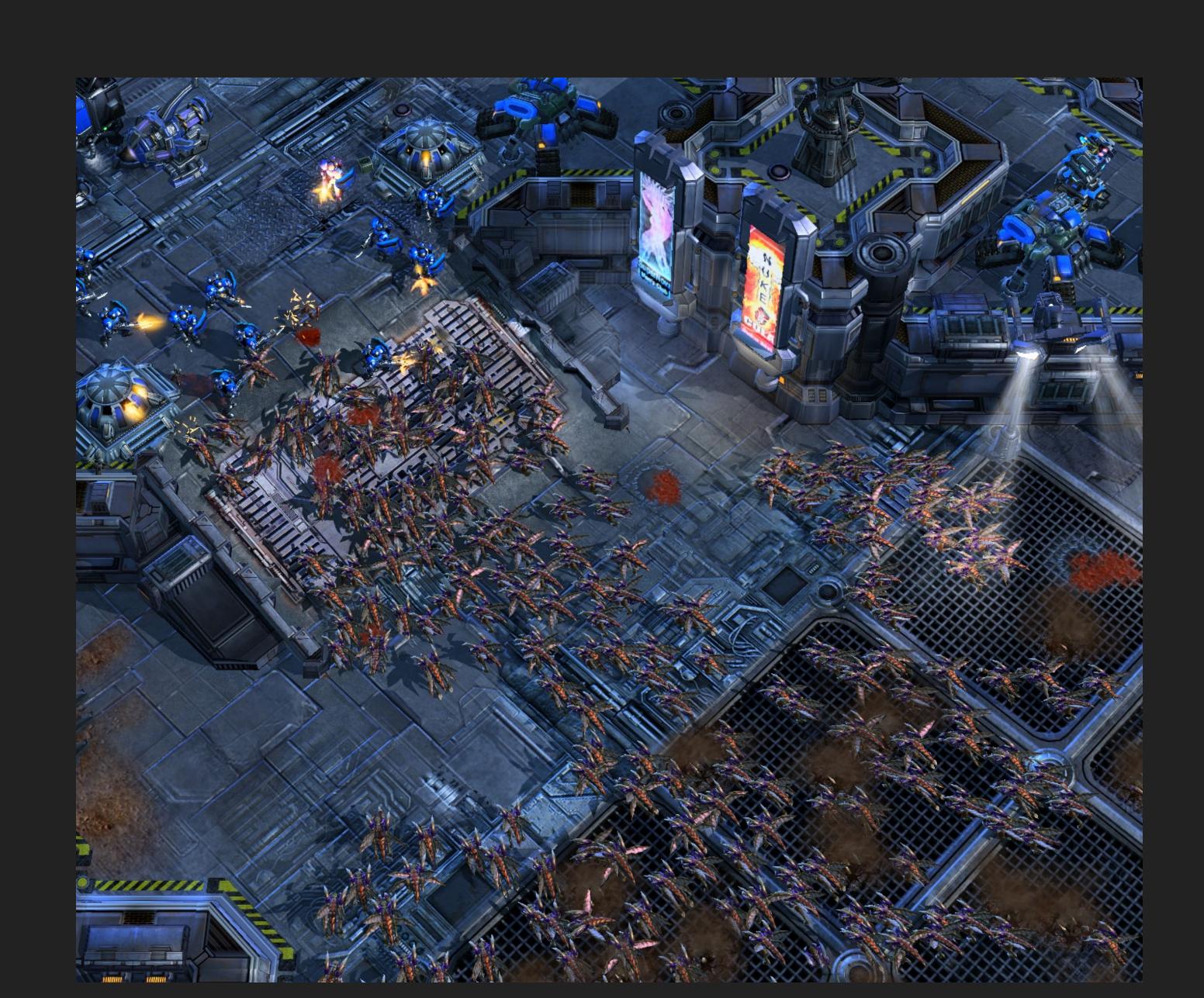A PROBABILISTIC CLASSIFIER IS A FORM OF MACHINE LEARNING THAT CALCULATES THE PROBABILITY THAT SOME INPUT BELONGS TO ONE OR MORE CATEGORIES

Some Person Smarter Than Me

WHAT IS IT GOOD FOR?

▸ Self-Improving AI

  ▸ Player Strategy Prediction

▸ Spam Filtering

  ▸ Auto-mod in Twitch chat

  ▸ Email

▸ Document Auto-sorting

▸ Text Analysis

  ▸ Autocorrect

  ▸ Sentiment Analysis

BAYES' THEOREM

$$P(X \mid Y) = \frac{P(Y \mid X) \times P(X)}{P(Y)}$$

BAYES' THEOREM EXPLAINED

$$P(X \text{ is of type } Y \mid \text{input } X = \text{some value}) = \frac{P(Y) \times P(X \text{ has been seen at all})}{P(Y \text{ is an option})}$$

EXAMPLE: GIVEN THE POST HISTORIES OF SEVERAL TWITTER ACCOUNTS, IS "GOOD" A POSITIVE WORD?

$$P(\text{word is positive} \mid \text{word} = \text{"good"}) = \frac{P(\text{word is used positively}) \times P(\text{word happens to be "good"})}{P(\text{a Twitter user has used a positive word})}$$

scikit

learn

PART 2

USING THE
SCIKIT NBC IN
PYTHON

HTTPS://GITHUB.COM/DWRODRI/AUCS_BAYES