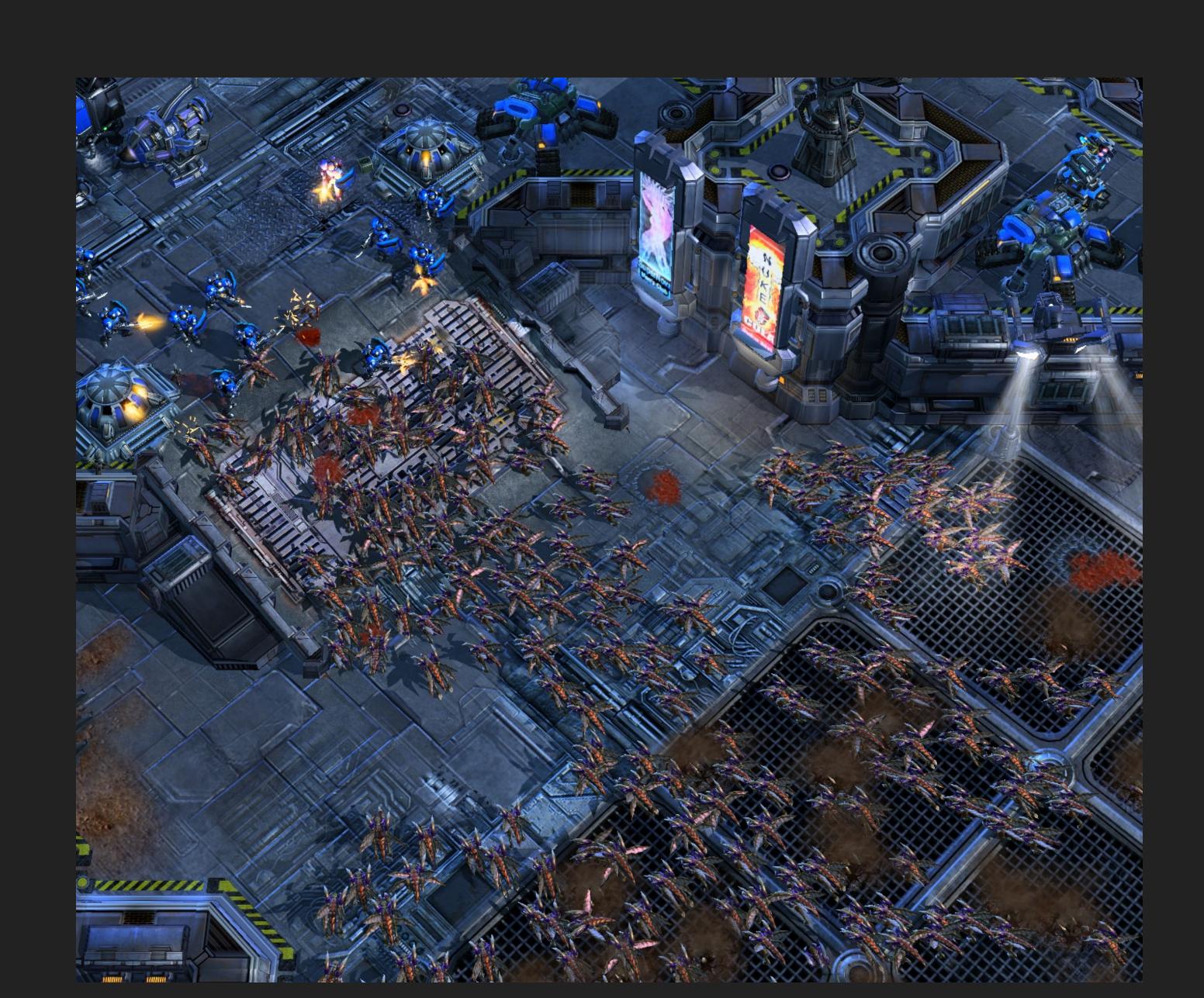**UACS WORKSHOP SERIES**

NAIVE BAYESIAN CLASSIFIER

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

HOW DOES IT WORK?

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

HOW DOES IT WORK? (FOR NORMAL PEOPLE)

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

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

$$P(\text{input "good" is a positive word}) = \frac{P(\text{good has been used positively}) \times P(\text{good is appears at all})}{P(\text{Amount of Twitter accounts with positive words})}$$

scikit

learn

PART 2

USING THE SCIKIT NBC IN PYTHON