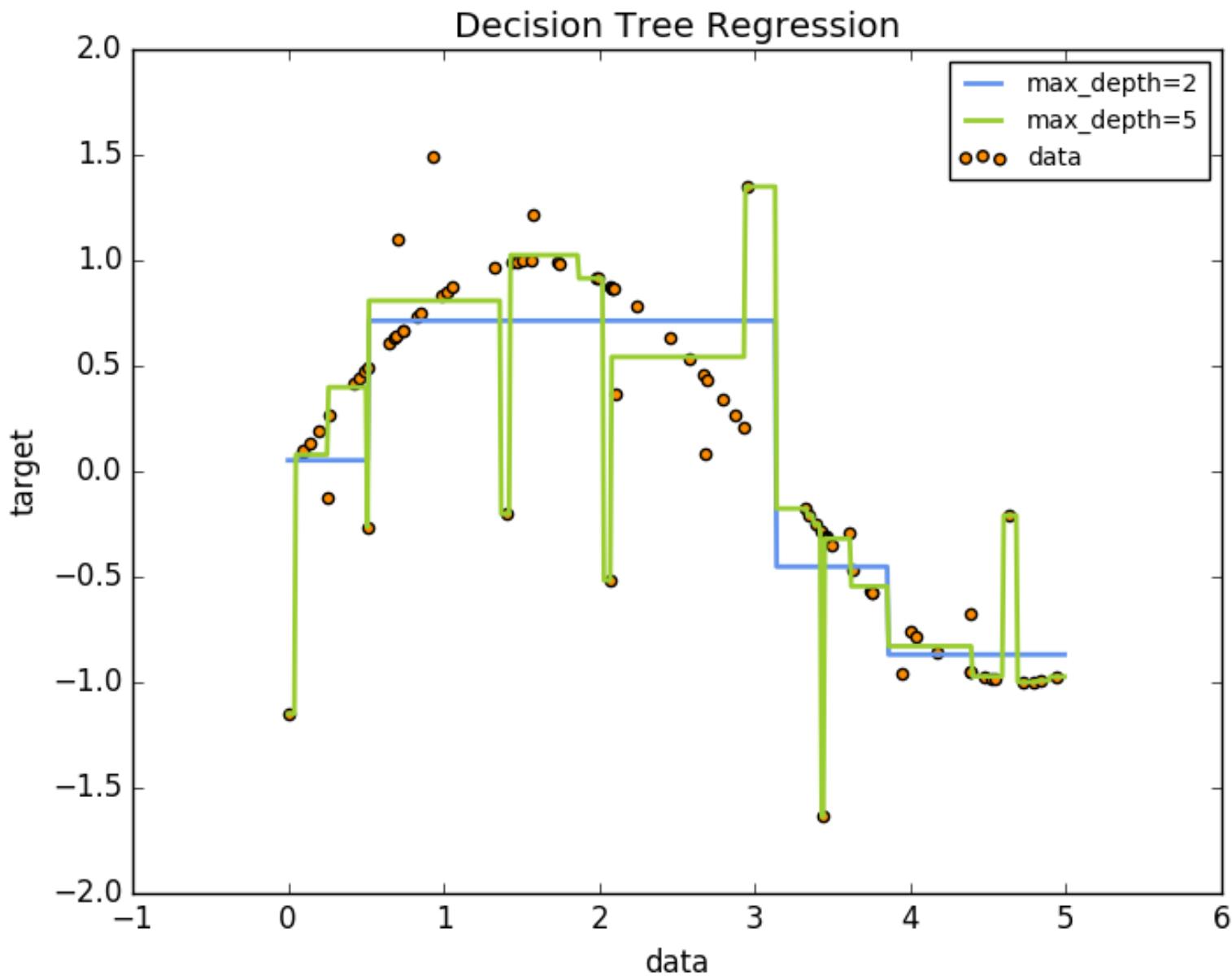


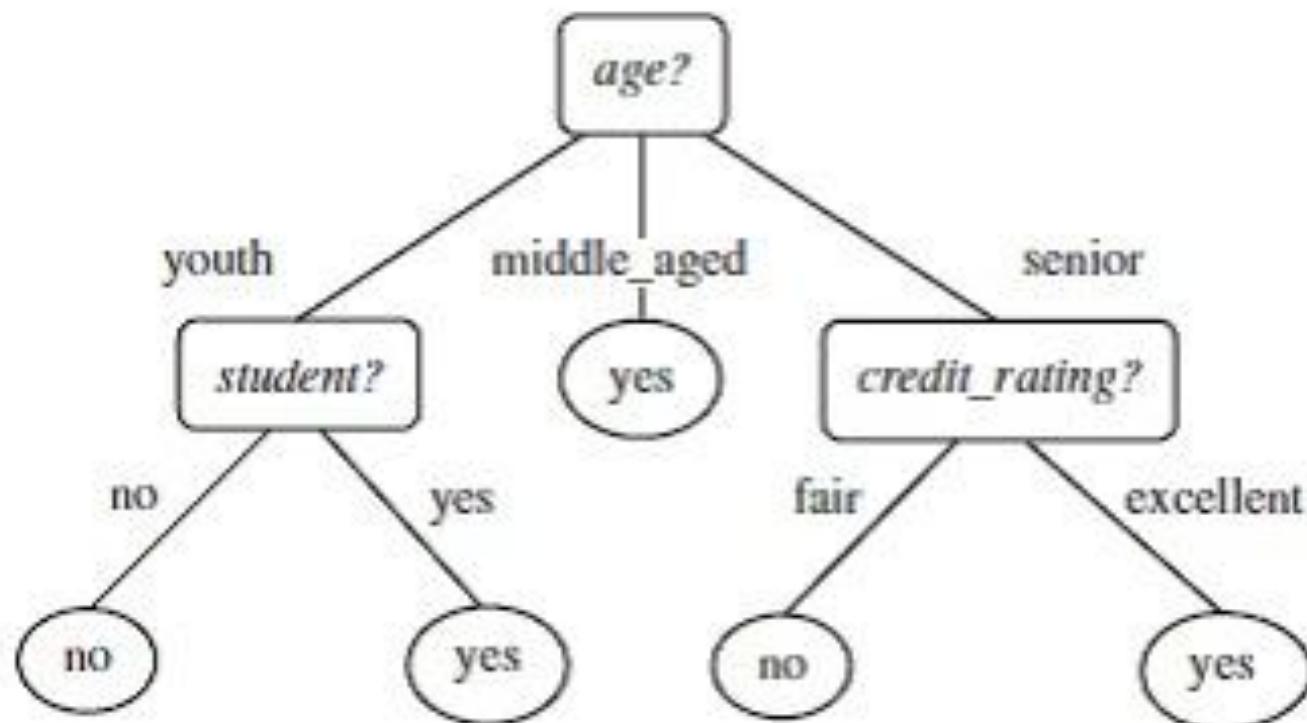
A close-up of Groot's face, showing his large brown eyes and textured bark-like skin. He is wearing a blue jumpsuit and is seated at a complex control panel made of wood and metal. He is pointing his right hand towards a red button on the panel. The background is a dark, star-filled space.

Decision Tree classifier

EX: Fitting a SINE curve

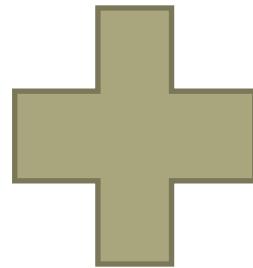


Decisions, Decisions, Decisions...



Algorithm Breakdown

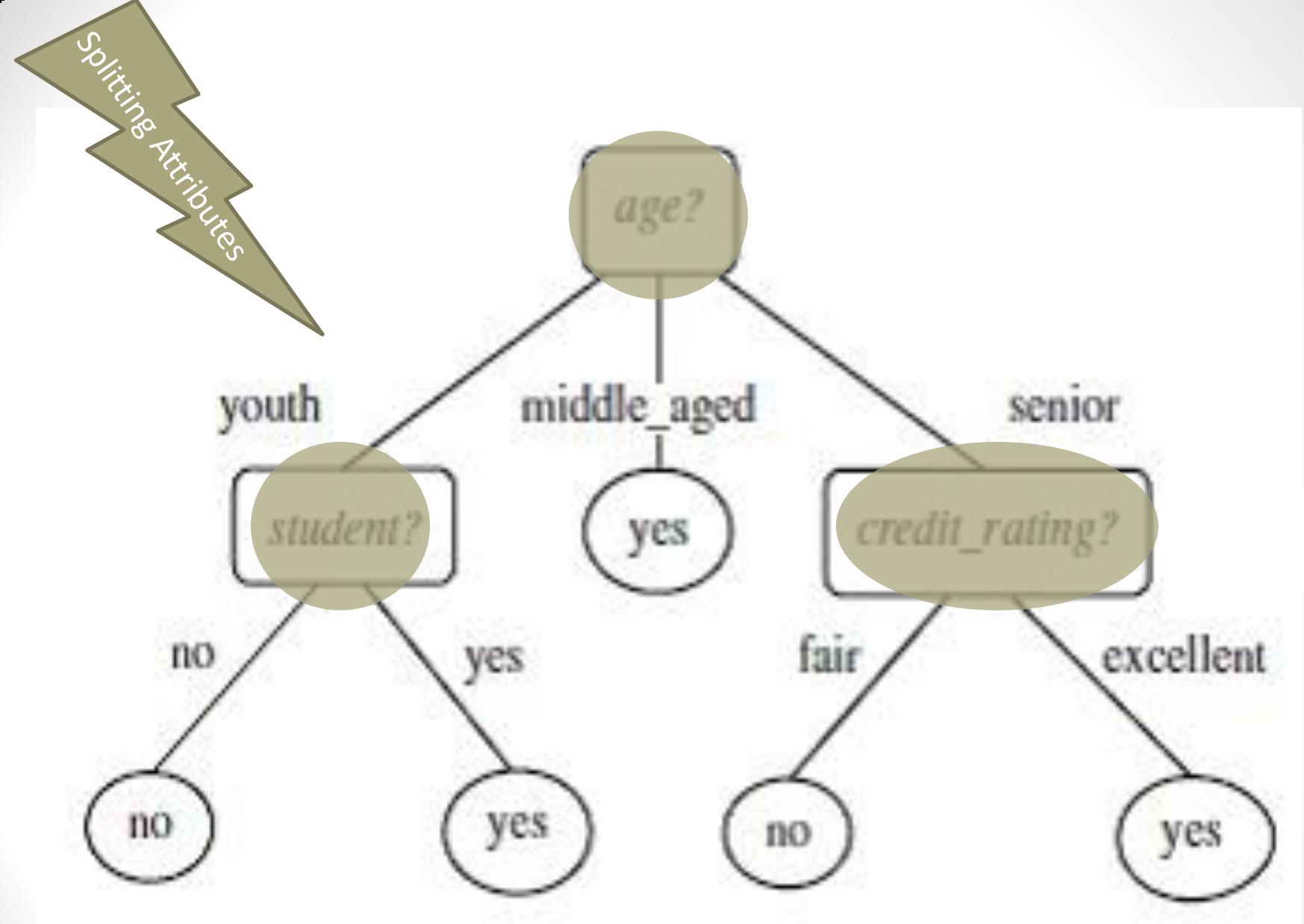
TREE INDUCTION



TREE PRUNING

Tree Induction

1. Take a set of pre-classified instances as inputs
2. Decide which attributes are best to split on
3. Split the dataset
4. Recurse on the resulting split datasets until all training instances are categorized – (includes pruning: removing unnecessary structures to prevent over-fitting)



Dataset – Training Set

| Individual | Age | Student ? | Credit Rating | Buys Computer? |
|--------------|-------------|-----------|---------------|----------------|
| Bruce Wayne | Middle Aged | N/A | Does Not Need | Yes |
| Steve Rogers | Youth | No | N/A | No |
| James Barnes | Youth | No | N/A | No |
| Tony Stark | Middle Aged | N/A | Does Not Need | Yes |
| Peter Parker | Youth | Yes | N/A | Yes |
| THE Alfred | Senior | N/A | Excellent | Yes |
| Some Guy | Senior | N/A | Fair | No |

Construct the Tree

Dataset – Test Set

| Individual | Age | Student ? | Credit Rating | Buys Computer? |
|------------------|-------------|-----------|---------------|----------------|
| Superman | Middle Aged | N/A | N/A | ? |
| Natasha Romanoff | Youth | No | N/A | ? |
| Rando 1 | Middle Aged | N/A | N/A | ? |
| Rando 2 | Youth | Yes | N/A | ? |
| Rando 3 | Senior | N/A | Fair | ? |

Testing Our Accuracy...

| Individual | Age | Student ? | Credit Rating | Buys Computer? |
|------------------|-------------|-----------|---------------|----------------|
| Superman | Middle Aged | N/A | N/A | Yes |
| Natasha Romanoff | Youth | No | N/A | No |
| Rando 1 | Middle Aged | N/A | N/A | Yes |
| Rando 2 | Youth | Yes | N/A | Yes |
| Rando 3 | Senior | N/A | Fair | No |