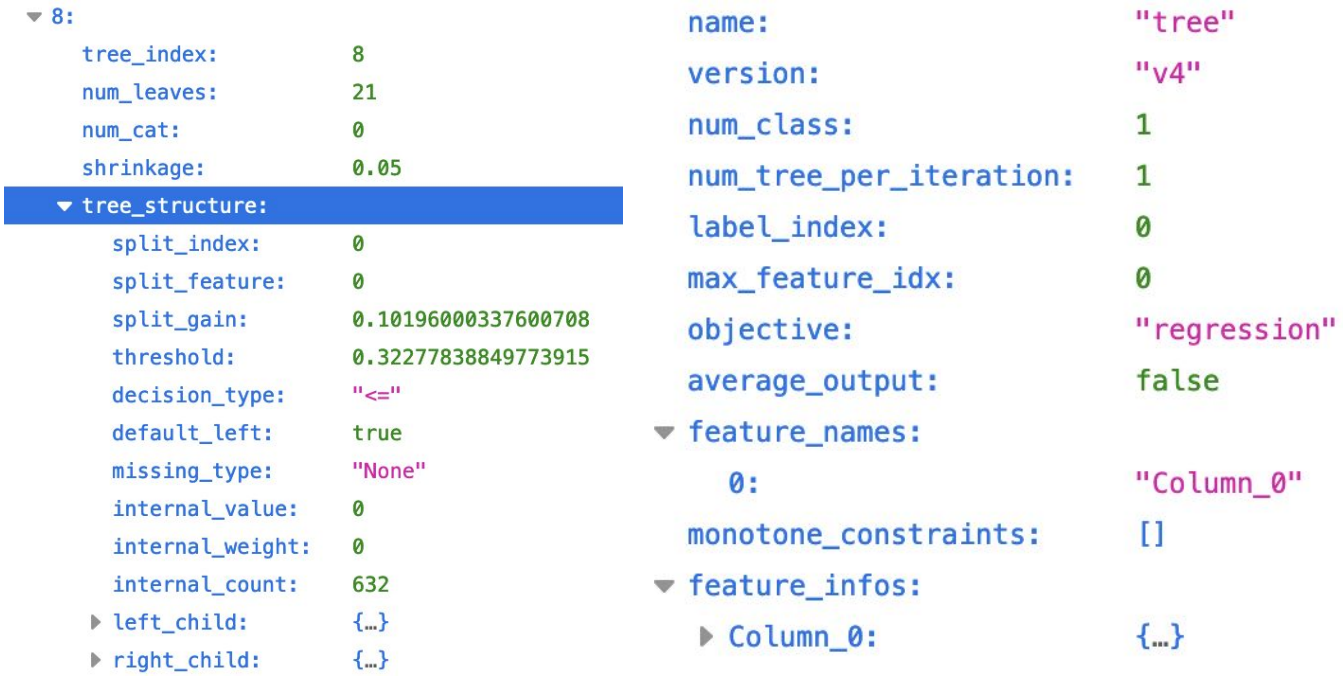
Tree Structure Analysis

Combinations Tested

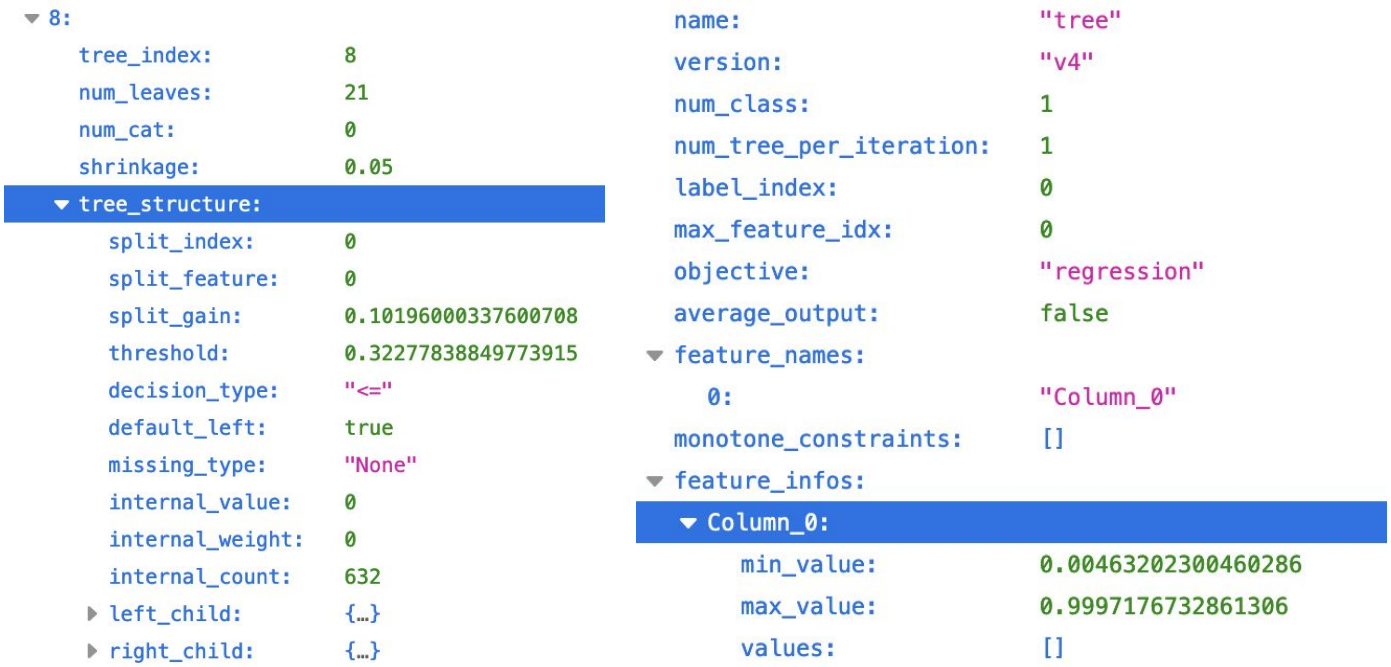
- Constant tree:
  - Single input output
  - Multi input single output
  - Single input multi output
  - X inputs Y outputs (1 < X < Y)
  - X inputs Y outputs (1 < Y < X)
- Linear tree:
  - Single input output
  - Multi input single output
  - Single input multi output
  - X inputs Y outputs (1 < X < Y)
  - X inputs Y outputs (1 < Y < X)
  - Single categorical input
  - Mixed numerical & categorical input
  - Multi categorical input

General Tree Structure



1 input 1 output numerical (constant)

General Tree Structure



1 input 1 output numerical (linear)

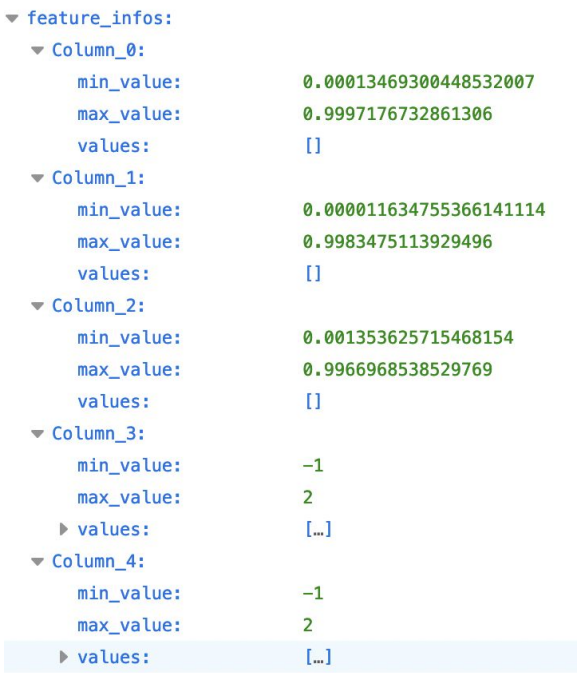
General Tree Structure

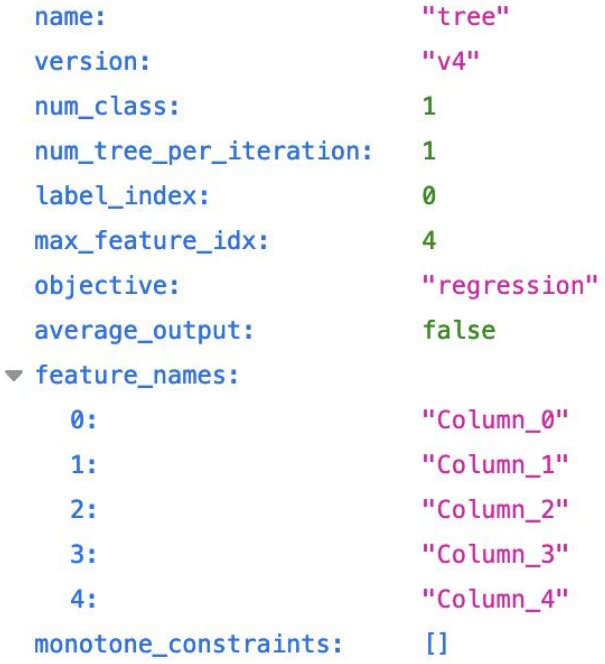
5 inputs 5 outputs numerical (linear)

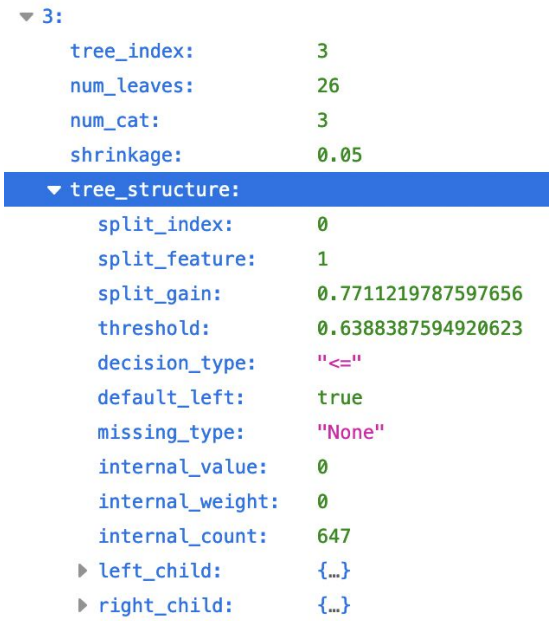
General Tree Structure

1 numerical 2 categorical inputs 5 outputs (linear)

General Tree Structure







3 continuous 2 categorical inputs 5 outputs (linear)

Summary

Cached Data:

- Name
- Version
- Num_Class
- Num_Tree_Per_Iteration
- Objective
- Max feature idx
- Monotone constraints
- Parent tree info:
  - Index
  - Num leaves
  - Num cat
  - Shrinkage
  - Decision type
- Weights and Values

Computed Data:

- min/max col value
- Leaf/child values
- Split indices
- Split gains
- Threshold
- Bounds