

Publication Review - Bao: Making Learned Query Optimization Practical

Authors:

- Ryan Marcus, MIT & Intel Labs ryanmarcus@csail.mit.edu
- Nesime Tatbul, MIT & Intel Labs tatbul@csail.mit.edu
- Parimarjan Negi, MIT pnegi@csail.mit.edu
- Mohammad Alizadeh, MIT alizadeh@csail.mit.edu
- Hongzi Mao, MIT hongzi@csail.mit.edu
- Tim Kraska, MIT kraska@csail.mit.edu

Presented at [SIGMOD '21](#), June 20–25, 2021, Virtual - Event, China

Reviewed for ITEC-6220 by: Firoz Kabir

Problem Description

- Long training time
- Inability to adjust to data and workload changes
- Tail catastrophe
- Black-box decisions
- Integration cost

The Bao difference:

- Short training time
- Robustness to schema, data, and workload changes
- Better tail latency
- Interpretability and easier debugging
- Low integration cost
- Extensibility

Figure 2: Bao system model

- Bao Prediction Model:

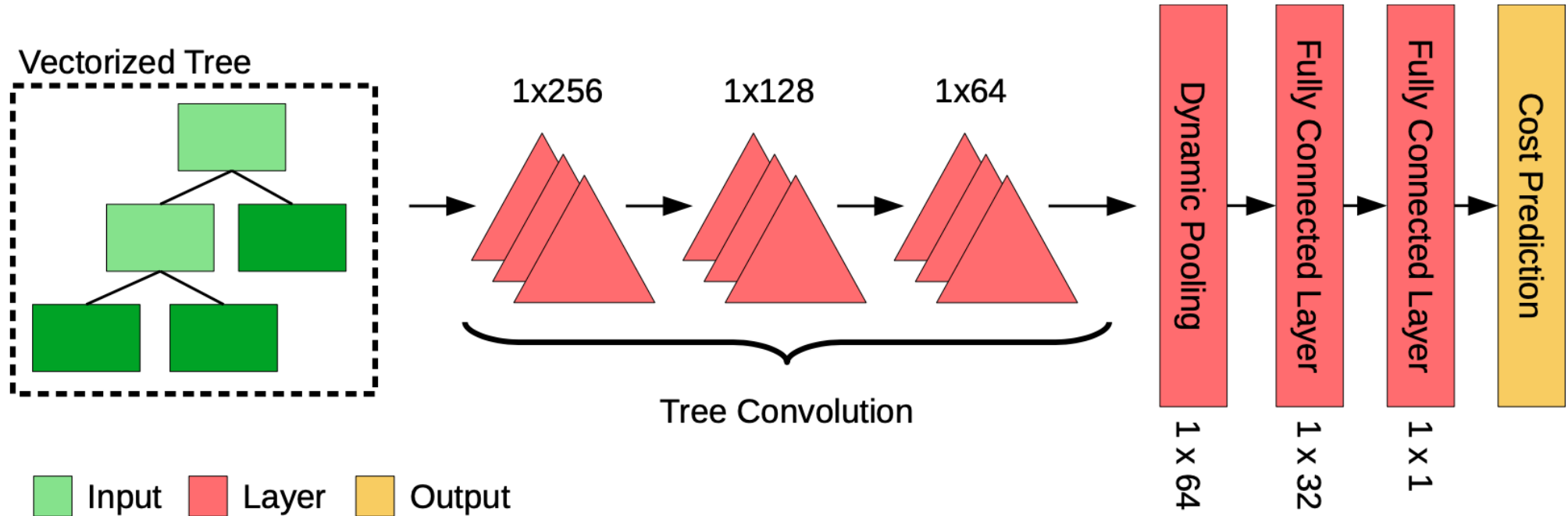


Figure 5: Bao prediction model architecture

- Bao Cost Comparison:

