

# Predicting Query Execution Time

Name

Mid-term ME Project Report

## Abstract

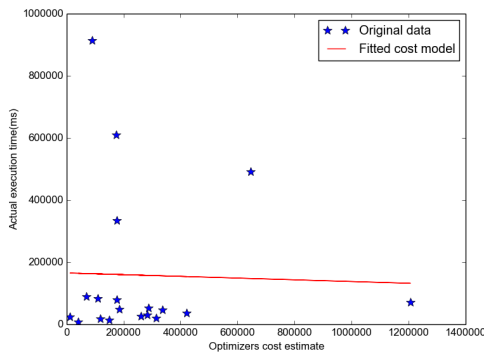
The ability to estimate the query execution time is central for a number of tasks in database system such as query scheduling, progress monitoring and costing during query optimization. Recent work has explored the use of statistical techniques in place of the manually constructed cost models used in query optimization. Such techniques, which require as training data along with the actual execution time, promises superior accuracies for they being able to account the for factors such as hardware characteristics and bias in cardinality estimates. However, such techniques fail to generalize i.e., produce poor estimates for queries that are not seen during the training.

In this work, we propose and evaluate predictive modeling techniques that learn query execution behavior at a fine grained operator level. For each operator, we consider different sets of features and build different models for them. Since there are only finitely many operators in database, this approach is practical and will be able to estimate any query as its a composition of many operators. We evaluate our approaches using TPC-H and TPC-DS workloads on PostgreSQL.

## 1 INTRODUCTION

Database systems can greatly benefit from accurate execution time predictions including:

- Query Optimizer:
- Query Scheduling:
- Progress monitoring:



## 2 2nd SECTION TITLE

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## 3 Conclusions and Future Work

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