TECHNICAL CONTRIBUTIONS [DRAFT]

TIME SERIES FORECASTING OF MONTHLY ACTIVE USERS WITH LONG SHORT-TERM MEMORY NETWORKS

Matthew Louis Rosendin University of California, Berkeley Department of Industrial Engineering and Operations Research April 13, 2018

Contents

1	Intr	roduction	3
	1.1	Motivation	3
	1.2	Goal	3
2	Object-Oriented Abstraction		
	2.1	Decomposition	3
	2.2	Encapsulation	3
3	Hyperparameter Optimization		
	3.1	Cross-validation	3
	3.2	Grid Search	3
	3.3	Results	3
4	Systems Engineering		
	4.1	Technology Stack	3
	4.2	Visualizations	3
	4.3	Job Scheduling	3
	4.4	Documentation	3
5	Next Steps		3
	5.1	Data Pipeline Automation (Apache Hadoop)	3
	5.2	Dimensionality Reduction by Feature Selection	3
	5.3	Improving Hyperparameter Optimization Efficiency	3
	5.4	Distributed Machine Learning Clusters	3
6	Con	nclusion	3
7	Ref	erence	3

1 Introduction

- 1.1 Motivation
- 1.2 Goal
- 2 Object-Oriented Abstraction
- 2.1 Decomposition
- 2.2 Encapsulation
- 3 Hyperparameter Optimization
- 3.1 Cross-validation
- 3.2 Grid Search
- 3.3 Results
- 4 Systems Engineering
- 4.1 Technology Stack
- 4.2 Visualizations
- 4.3 Job Scheduling
- 4.4 Documentation
- 5 Next Steps
- 5.1 Data Pipeline Automation (Apache Hadoop)
- 5.2 Dimensionality Reduction by Feature Selection
- 5.3 Improving Hyperparameter Optimization Efficiency
- 5.4 Distributed Machine Learning Clusters
- 6 Conclusion
- 7 Reference