

USING TIME SERIES MODELS FOR DEFECT PREDICTION
IN SOFTWARE RELEASE PLANNING

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ABSTRACT

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To produce a high-quality software release, sufficient time should be allowed for testing and fixing defects. Otherwise, there is a risk of slip in the development schedule and/or software quality. A time series model is used to predict the number of bugs created during development. The model depends on the previous numbers of bugs created. The model also depends, in an exogenous manner, on the previous numbers of new features resolved and improvements resolved. This model structure would allow hypothetical release plans to be compared by assessing their predicted impact on testing and defect-fixing time. The VARX time series model was selected as a reasonable approach. The accuracy of the model varies for different sampling periods, window sizes, and degree of differencing.

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TABLE OF CONTENTS

Chapter	Page
I INTRODUCTION	1
II LITERATURE REVIEW	3
III MOTIVATION	6
The Next Release Problem.....	7
The Gap between Abstraction and Reality.....	9
IV BACKGROUND	12
Time Series Models.....	12
Trends and Stationarity	13
V METHODS	16
Data Methods	16
Modeling Methods	21
VI RESULTS	26
Data Results	26
Modeling Results	28
VII DISCUSSION	43
VIII THREATS TO VALIDITY	45
Internal Validity	45
External Validity	47
IX FUTURE WORK.....	48
Exclusion of Outliers.....	48
Modeling with Birth-death Processes	50
Modeling with Change Management Data	51
X CONCLUSION.....	52
REFERENCES	53
APPENDIXES	55
Appendix A—Time Series Data Plots	55
Appendix B—Stationarity Testing Results.....	61
Appendix C—Exploratory Modeling Results.....	68

LIST OF TABLES¹

Table		Page
1	Results of sampling example issue data	19
2	Date ranges of data collected, and the number issues that resulted.	26
3	Sliding windows sizes to be used for each sampling period.....	27
4	Parameter values selected for final modeling.	32
5	A comparison of the final modeling results across datasets	42
6	A comparison of full and restricted sample ranges.....	49

¹ The tables shown in the Appendixes are not listed here.

LIST OF FIGURES²

Figure		Page
1	An explanatory model.....	7
2	Applying defect prediction in the Next Release Problem.....	10
3	An overview of data methods	16
4	Sampling issue data	19
5	An illustration of time-windowing	21
6	Plot of the none-valid proportion.....	30
7	Plot of the 95% in-interval proportion.....	31
8	Distributions for actual and predicted number of bugs, MongoDB <i>core server</i> dataset	34
9	Histogram of prediction errors, MongoDB <i>core server</i> dataset	34
10	Q-Q plot of forecast mean errors, MongoDB <i>core server</i> dataset	35
11	Distributions for actual and predicted number of bugs, Hibernate <i>orm</i> dataset	36
12	Histogram of prediction errors, Hibernate <i>orm</i> dataset	37
13	Q-Q plot of forecast mean errors, Hibernate <i>orm</i> dataset	37
14	Distributions for actual and predicted number of bugs, NetBeans <i>platform</i> dataset	38
15	Histogram of prediction errors, NetBeans <i>platform</i> dataset	39

² The figures shown in the Appendixes are not listed here.

16	Q-Q plot of forecast mean errors, NetBeans <i>platform</i> dataset	39
17	Distributions for actual and predicted number of bugs, NetBeans <i>java</i> dataset	41
18	Histogram of prediction errors, NetBeans <i>java</i> dataset	41
19	Q-Q plot of forecast mean errors, NetBeans <i>java</i> dataset	42
20	Forecast errors by window reveal the location of an outlier.....	49
21	Undifferenced time series data from the Hibernate <i>orm</i> dataset.....	50