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Autore	De Silva Anthony Mihirana
Titolo	Grammar-Based Feature Generation for Time-Series Prediction // by Anthony Mihirana De Silva, Philip H. W. Leong
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Soggetti	Computational intelligence Pattern perception Economics, Mathematical Computational Intelligence Pattern Recognition Quantitative Finance
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Introduction -- Feature Selection -- Grammatical Evolution -- Grammar Based Feature Generation -- Application of Grammar Framework to Time-series Prediction -- Case Studies -- Conclusion.
Sommario/riassunto	This book proposes a novel approach for time-series prediction using machine learning techniques with automatic feature generation. Application of machine learning techniques to predict time-series continues to attract considerable attention due to the difficulty of the prediction problems compounded by the non-linear and non-stationary nature of the real world time-series. The performance of machine learning techniques, among other things, depends on suitable engineering of features. This book proposes a systematic way for generating suitable features using context-free grammar. A number of feature selection criteria are investigated and a hybrid feature generation and selection algorithm using grammatical evolution is

proposed. The book contains graphical illustrations to explain the feature generation process. The proposed approaches are demonstrated by predicting the closing price of major stock market indices, peak electricity load and net hourly foreign exchange client trade volume. The proposed method can be applied to a wide range of machine learning architectures and applications to represent complex feature dependencies explicitly when machine learning cannot achieve this by itself. Industrial applications can use the proposed technique to improve their predictions.

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