Dipartimento di
Informatica, Sistemistica
e Comunicazione

SEMINAR ANNOUNCEMENT

Tuesday, 7th October 2025
at 11:00 am
Room "Sala Seminari" - Abacus Building (U14)

Introduction to Foundation Models for Time Series and an Application to Scenario Generation

Speaker
Dr Alan King,

Abstract
This talk presents a basic introduction to the emerging area of Time Series Foundation Models (TSFM), provides a survey of the state of the art, and ends with an application to scenario generation.
Much like Large Language Models (LLM) such as ChatGPT, the goal of a foundation model for time series is to provide high-quality forecasts with little or almost no task-specific training.
Given the potential impact of such a capability and recognizing its commercial value, there are now several major research efforts devoted to this area. Some of them extend the token-based transformer models, and some extend auto-encoder models to support zero-shot forecasting across different domains.
Finally, we present preliminary results on the use of TSFMs to calibrate a scenario generation model grounded in the Doob-Meyer martingale decomposition, highlighting both opportunities and challenges for future research.

Short bio
Alan King had a long and distinguished career at IBM Research in Yorktown Heights, New York.
At IBM, Alan participated in many research programs, including neural network proxy models, cryptocurrencies, and massively parallel computing, as manager, senior software engineer, lead consultant, university relations, and research staff advisor to senior leadership.
His research interest concerns the modeling and solution of stochastic programs, a branch of decision-making under uncertainty that applies to planning and operations. His contributions in this field include analysis of variance for solutions, software for solvers and tools, and modeling methodology.
Today, Alan is exploring how time series foundation models can be used to represent probability distributions in stochastic programs, with applications in energy and finance.

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