L1 Luce
Résumés des articles L0 Alex

A Case for Business Process-Specific Foundation Models

The foundation models are designed to process different types of data, like images, code, music, and graphics, all together instead of separately.
BPM involves organizing tasks in a specific order to produce a product or service.
Foundation models are deep neural network models trained on massive data that can be reused and have the ability to make predictions and perform tasks they haven't seen before.
The article also discusses the architecture of these models, specifically the Mixture-of-Modality-Experts (MoME) approach, which allows for the holistic processing of different types of data like language, vision, and graphics. It mentions two main architectures: dual encoder and fusion-encoder, as well as two types of downstream tasks: domain agnostic and domain specific.

A Deep Learning Approach for Predicting Process Behaviour at Runtime

Here the main focus is on using AI to predict the next sequence of words in a running process. They highlight the importance of managing time through the process for various business applications. For example, providing information to customer service agents about the remaining time until a case is resolved or helping case managers identify risky cases and intervene early.

To make these predictions, the authors propose using Deep Learning and specifically the Recurrent Neural Network (RNN) with Long Short Term Memory (LSTM). The RNN consists of input cells, hidden cells, and output cells. The LSTM architecture is favored for RNN because it incorporates gate mechanisms that help the model decide what information to remember or forget at each time step.

The LSTM cells allow the model to maintain a "state" over time, preserving previous knowledge and using it to make more accurate predictions. They create a language prediction process, where the LSTM cells are used to predict the next words in a sequence.

A value-oriented Artificial Intelligence-as-a-Service business plan using integrated tools and services
AI has grown in the past 50 years due to our desire for automation, optimization, and precision. It's now a key driver of Industry 4.0, impacting sectors like manufacturing, energy, and finance. Adopting AI is crucial for businesses to stay competitive and improve performance.

A new hybrid artificial neural networks for rainfall-runoff
The study explores the use of genetic algorithms, feed forward neural networks, and data pre-processing techniques. They tested the model in the Aghchai watershed in Iran to accurately model rainfall-runoff processes for water resource management. Data-Driven Models (DDMs) are preferred when there's a lack of complete physical understanding. Conventional time series models have limitations in capturing non-stationarity and non-linearity, which is why AI approaches like Artificial Neural Networks (ANN) are used. The

proposed model focuses on data pre-processing, input variable selection, and data clustering to improve accuracy. They compare the performance of the PELMNN model with other models like ANN, ANFIS, and WANFIS.