What is the Answer to AI Model Risk Management?

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Franz CEO Dr. Jans Aasman Explains how to manage AI Modelling Risks.

AI model risk management has moved to the forefront of contemporary concerns for statistical Artificial Intelligence, perhaps even displacing the notion of ethics in this regard because of the immediate, undesirable repercussions of tenuous machine learning and deep learning models.

AI model risk management requires taking steps to ensure that the models used in artificial applications produce results that are unbiased, equitable, and repeatable.

The objective is to ensure that given the same inputs, they produce the same outputs.

If organizations cannot prove how they got the results of AI risk models, or have results that are discriminatory, they are subject to regulatory scrutiny and penalties.

Strict regulations throughout the financial services industry in the United Statesand Europe require governing, validating, re-validating, and demonstrating the transparency of models for financial products.

There's a growing cry for these standards in other heavily regulated industries such as healthcare, while the burgeoning Fair, Accountable, Transparent movementtypifies the horizontal demand to account for machine learning models' results.

AI model risk management is particularly critical in finance.

Financial organizations must be able to demonstrate how they derived the offering of any financial product or service for specific customers.

When deploying AI risk models for these purposes, they must ensure they can explain (to customers and regulators) the results that determined those offers.

Read the full article at Algorithm-XLab.

New!!! AllegroGraph v6.5 – Multi-model Semantic Graph and Document Database

Download – **AllegroGraph v6.5 and Gruff v7.3**

AllegroGraph – **Documentation**

Gruff – **Documentation**

Adding JSON/JSON-LD Documents to a Graph Database

Traditional document databases (e.g. MongoDB) have excelled at storing documents at scale, but are not designed for linking data to other documents in the same database or in different databases. AllegroGraph 6.5 delivers the unique power to define many different types of documents that can all point to each other using standards-based semantic linking and then run

SPARQL queries, conduct graph searches, execute complex joins and even apply Prolog AI rules directly on a diverse sea of objects.

AllegroGraph 6.5 provides free text indexes of JSON documents for retrieval of information about entities, similar to document databases. But unlike document databases, which only link data objects within documents in a single database, AllegroGraph 6.5 moves the needle forward in data analytics by semantically linking data objects across multiple JSON document stores, RDF databases and CSV files. Users can run a single SPARQL query that results in a combination of structured data and unstructured information inside documents and CSV files. AllegroGraph 6.5 also enables retrieval of entire documents.

There are many reasons for working with JSON-LD. The big search engines force ecommerce companies to mark up their webpages with a systematic description of their products and more and more companies use it as an easy serialization format to share data.

A direct benefit for companies using AllegroGraph is that they now can combine their documents with graphs, graph search and graph algorithms. Normally when you store documents in a document database you set up your documents in such a way that it is optimized for certain direct retrieval queries. Performing complex joins for multiple types of documents or even performing a shortest path through a mass of object (types) is too complicated. Storing JSON-LD objects in AllegroGraph gives users all the benefits of a document database AND the ability to semantically link objects together, run complex joins, and perform graph search queries.

Another key benefit for companies is that your application developers don’t have to learn the entire semantic technology stack, especially the part where developers have to create individual RDF triples or edges. Application developers love to work with JSON data as serialization for objects. In JavaScript the JSON format is syntactically identical to the code for creating JavaScript objects and in Python the most import data structure is the ‘dictionary’ which is also near identical to JSON.

Key AllegroGraph v6.5 Features:

- Support for loading JSON-LD and also some non-RDF data files, that is files which are not already organized into triples or quads. See Loading non-RDF data section in the Data Loading document for more information on loading non-RDF data files. Loading JSON-LD files is described along with other RDF formats in the Data Loading document. The section Supported RDF formats lists all supported RDF formats.

- Support for two phase commits (2PC), which allows AllegroGraph to participate in distributed transactions compromising a number of AllegroGraph and non-AllegroGraph databases (e.g. MongoDB, Solr, etc), and to ensure that the work of a transaction must either be committed on all participants or be rolled back on all participants. Two-phase commit is described in the Two-phase commit document.

- An event scheduler: Users can schedule events in the future. The event specifies a script to run. It can run once or repeatedly on a regular schedule. See the Event Scheduler document for more information.

- AllegroGraph is 100 percent ACID, supporting Transactions: Commit, Rollback, and Checkpointing. Full and Fast Recoverability. Multi-Master Replication

- Triple Attributes – Quads/Triples can now have attributes which can provide fine access control.
- Data Science – Anaconda, R Studio
- 3D and multi-dimensional geospatial functionality
- SPARQL v1.1 Support for Geospatial, Temporal, Social Networking Analytics, Hetero Federations
- Cloudera, Solr, and MongoDB integration
- JavaScript stored procedures
- RDF4J Friendly, Java Connection Pooling
- Graphical Query Builder for SPARQL and Prolog – Gruff
- SHACL (Beta) and SPIN Support (SPARQL Inferencing Notation)
- AGWebView – Visual Graph Search, Query Interface, and DB Management
- Transactional Duplicate triple/quad deletion and suppression
- Advanced Auditing Support
- Dynamic RDFS++ Reasoning and OWL2 RL Materializer
- AGLoad with Parallel loader optimized for both traditional spinning media and SSDs.

Numerous other optimizations, features, and enhancements. Read the release notes – https://franz.com/agraph/support/documentation/current/release-notes.html