FUZZY LOGIC

HOW TO EVALUATE IF DIFFERENCES ARE ACCEPTABLE?

Sometimes, we have to decide, if or not, what we will do is acceptable in regards of a given objective. There are situations where what we have is close to what we are looking for but with some small differences. Most of the time, we humans, accept those small differences. We are able to recognize something even if the representation that we have is not matching what we perceive. And if we put this aptitude in a software, the software will begin to accept things even if those things are not exactly what is expected. To do this, we use Fuzzy Logic.

With numbers, this concept works well and it is easy to understand how to implement it. Defining some acceptable boundaries is enough (like we do for pro-active maintenance engines).

But what about words or sentences? How to apply fuzzy logic on sentences or words so that two words which are not identical are processed as they would be. Same for images, sounds, etc...

HECTOR IS OUR FUZZY LOGIC ENGINE

At Beamak we have a solution for that and this solution is Hector. The first version of this fuzzy logic engine was created in 1994 and we still work on it to improve performance and acceptance criteria. The way Hector works is very close to the human brain and whenever, as an example, words or sentences needs to be compared, Hector is of a great help.

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AND WE ALREADY HAD SUCCESS WITH THIS

A leading European aeronautical manufacturer, tested Hector to quality check user manual and maintenance sheets. Manuals are made of thousands of pages and as of today, this check is done by humans and it is taking weeks to complete. With Hector, the exact same job is done in a few seconds with very good results.

A top-five Consulting firm used Hector on data mining engines. We coded the neural network to enable machine learning and embedded our fuzzy engine to maximize the evaluation of the similarity of sentences. We had a “pattern” against which incoming data were evaluated and Hector took care to find matching items.

Some of our clients also use Hector before a data migration to detect dark data and chase duplicates (Leading electric utility company in Germany / SAP migration). This way, the database is cleaned and business analytic tools are providing better reports.

Some other clients used Hector as a “Smart” search function in their software or use it as their Chatbot engine.

In some other cases, fuzzy logic can also be used to make decisions or to help evaluate results which nature is too human.

Beamak - We make machines think !

Beamak was created in 2016 by Cognitive Psychologists who worked for the French National Center for Scientific Research (C.N.R.S.) and the Computer Science Laboratory for Artificial Intelligence (LAFORIA).

Our functional cognitive architecture using core Psychological components brings to AI engines the ability to understand a context and adapt their attitudes to act and communicate. These components are using Beamak Smart Neuron concept which is processing data in a natural way.

Beamak is helping companies worldwide to accelerate their digital transformation by creating and designing AI solutions which includes cognitive and psychological features.

Founders of Beamak worked for over 20 years for leading consulting and technology companies such as Andersen Consulting, Accenture, Cap Gemini or Hewlett-Packard, managing over 200 projects for Fortune 500 companies in EMEA.

At Beamak, we love what we do and we stick to our promises. We would be glad to be part of your next journey.

Looking forward to work with you soon...