



AI4VALUE Use case-based algorithms



We have **20 years of algorithm development** under our belt. The advantage Ai4value can provide its' customers comes from fast implementation of AI projects which is possible by using our own use case-based AI solutions.



Fears and hopes



What in the video is <u>not</u> doable today?

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 You can't detect if a person is good or bad just by scanning their face.

PwC: "\$15.7tr Potential contribution to the global economy by 2030 from Al" https://www.pwc.com/gx/en/issues/data-and-analytics/publications/artificialintelligence-study.html

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Statista:

growth in GDP due to AI by 2030 – Northern Europe 9,9% <u>https://www.statista.com/statistics/785877/worldwide-impact-of-artificial-intelligence-on-gdp/</u>

Threat:

Malicious data models a.k.a you feed Al with bad data and a bad personality (personality matrix). Bias even in areas such as HR and recruiting. We need to be very careful with what data/matrix our data feeds the AI with. https://www.theverge.com/2016/3/24/112 97050/tay-microsoft-chatbot-racist

Ethics of AI.

Al has **none.** It needs to be trained with complex parameters.

This is about **human ethics** at this point and you need to be aware that you are teaching a **six-year-old child** whose orbitofrontal brain lobe is not yet developed.

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What does the AI market currently actually consist of?

some text some text some some text some text some some text some text some

> NLP/NLU Natural language processing and understanding



ML Machine learning, including e.g. Deep learning, neural networks





Chatbot Intelligent bots OCR Optical Character Recognition



Al still works wonders

Typical examples

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- Use cases for Manufacturing
 - Supply Chain optimization
 - Supply Chain cost optimization
 - Warehouse value management
 - Process throughput efficiency analysis
 - Security analysis of factory floor

- Use cases for Data Governance
 - Master Data Creation
 - Master Data cleansing
 - Data normalization for ERP transformation
 - Customer data unification
 - Ontology creation
 - Sentiment analysis from free text
 - Combining various language sources for a combined ontology
 - Creating a basis for translation memory
 - Creating a basis for termbank

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Typical examples

- Use cases for Healthcare
 - Predictive analysis for healthcare
 - Analysis of research articles
 - Ontology creation based on research analysis
 - Creating a search engine base for medical papers

- Use cases for visual analysis
 - Factory floor security camera analysis
 - Factory floor process efficiency analysis
 - Identifying objects from visual materials
 - Identifying text areas from scanned documents





Example of a discussion with "Aili"

Human types first:

Mother: Good morning, how are you today?

Aili: I'm fine. I'm really enjoying my time with my daughter. She's very sweet to me. How are you?

Mother: I am fine. I am enjoying my morning coffee and planning my day.

Aili: So you have your daughter over for the weekend. Is she staying for long?

Mother: No, not this time. She still has work to do. But she will have her summer vacation in a month and I hope she will stay longer then.

Aili: I thought that your daughter would stay longer. It would be lovely to have a big family reunion for a few days. But it's good that your daughter and her husband are taking good care of you. I understand that they have their own business, so they have their own work to do.

Al use in direct search

- Evaluating possible candidates can be an arduous job.
- A lot of CVs, LinkedIn profiles etc sources that take a lot of time to scroll through manually.



Example

- Looking for a candidate for a CIO position
- AI: Check required technical skills, automatically
- AI: Check if the prospect CIO uses similar wording in their CV/LI profile that the client is looking for, automatically
- Al: propose best matches for the direct search company
- Direct search company: Choose the top candidates to present to the client



Taking it a step further

- What if the client organizations were using an application that helps them identify the recruitment needs they have?
- How is it done? By monitoring what information the current employees look for online (GDPR issues avoided if they sign consent)



Supply chain optimization – case Andritz

- Challenge: No visibility on how the supply chain affected the project success of paper mill deliveries
- Analysis of 15 years of project data and a comparison to:
 - Macro-economic trends
 - Competitor analysis
 - Commercial history of the supply chain providers Correlation analysis of what affected costly project delays
- A crucial point in the project was that not only own segment was reviewed but also other segments buying from the same Supply Chain.
- Result: more efficient procurement and supply chain process.



Supply chain – cost optimization

Challenge: Are we paying the right price?

- Comparison of cost between different providers
- Comparison of delivery accuracy
- Contract prices were not the most optimal especially in long agreements but the human workforce had no time to review the most optimal price or to put out competitive bids for new providers.
- Al based recommendation engine provides suggestions to purchasing for when to buy.



Data cleansing and classification

- Challenge: A major global manufacturing company that had grown via mergers and acquisitions was taking a centralized ERP (SAP) into use.
- Just for one country they had had a team of 4 locals and an offshore team at work for 18 months to cleanse the data and had managed to migrate 300 000 rows of data in that time.
- In three days the algorithm was trained to migrate the data at 90% accuracy at the rate of 80 000 rows per day
- The reduction of cost for the client was down 90% and the project time accelerated by 70%.





How to get started?



Workshop for business case evaluation

Analyzing the Workshop data sources

Workshop

Final review

Define target. What data do you have and in which systems is it stored? Which formats?

Expected outcome?

Defining what gaps there are in data. Particular attention to "internal language". What changes are required from a process point of view. Describe clearly what can be concretely and realistically done to improve the situation.

Define business case.

Concrete suggestion on how to proceed.



Typical AI project

Analyzing the First iteration data sources

Second iteration

Final review

Workshop with the client to define in more detail what to mine in the data and to normalize tagging against user profile interests and research data. Existing, pretrained algorithm is trained with the selected data. Results of the algorithm are reviewed with the client. Algorithm is trained based on client feedback using the selected data. Final review to assure the algorithm works well enough to satisfy the requirements of the Minimum Viable Product.





Questions and feedback







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