



Günter, Artificial Intelligence (AI) is the buzz word on everyone's lips these days. What is it exactly?

That's a good question. We all think we know what AI is, but the truth of the matter is: there is no universal, commonly accepted definition of AI and its affiliated terms like Machine Learning, Deep Learning, Self-learning...

I have defined these terms in a small glossary as we understand them within IRIS to make sure we are aligned for the rest of the discussion.

AI algorithms and techniques exist since the 50s, why is it gaining so much traction now?

The very idea of Artificial Intelligence has indeed been there for decades. AI gained its name in the summer of 1956 when leading scientists gathered to define the mission and the scope of AI. Since 2005, large tech

Günter Hensges (IRIS COO) gives us his view on how Artificial Intelligence (AI) is transforming the Information Management Industry in general and Document Capture in particular.

companies like Apple invest in commercial applications of AI/Machine learning. But the real **breakthrough** actually happened in 2010-11 when **deep learning** techniques took off thanks to the conjunction of 1) the ever-**decreasing cost of hard disks and RAM**; 2) the huge deluge of data available because of the internet (also known as **Big Data**).

What is AI bringing to the Information Management (IM) industry?

Information Management is all about **collecting the information, capturing the key data, routing it to the right recipient(s)** through workflows before archiving or deleting.

Since the big data revolution, I believe that our industry is at the center of most organizations' **journey to digital transformation**.

The necessity to quickly and efficiently process the huge amount of data and documents getting into every business has never been more important. I don't consider AI as a separate set of technologies that will take over the technologies of the past overnight. AI-powered technologies have been **deeply integrated into IRIS**

Gunther's Glossary

Artificial Intelligence (AI)

is the property of machines, computer programs and systems to perform the intellectual and creative functions of a human being, independently find ways to solve problems, be able to draw conclusions and make decisions.

Machine Learning

is a subfield of AI, focusing on the development of computer programs that use data to learn/identify inherent patterns and create predictions or decisions. E.g.: algorithms sorting out spam email.

Deep Learning

is a subfield of Machine Learning which uses multi-layered artificial neural networks. "Deep" refers to the number of hierarchical layers.

Supervised learning

means that the training of the system is performed using labeled data. E.g.: automatic document classification performed by a system trained on labeled sample sets of different document classes (contracts, CVs, Invoices...).

For unsupervised learning

(self-learning), *no labeled training data is required. Using the same example as above (document classification), the system will learn from the data to define the document classes and classify the documents.*



software and solutions for many years and their importance is growing.

What are the benefits businesses can expect from the AI revolution?

Most companies are busy with digital transformation, AI is one of the techniques available to achieve this goal.

In short, it is all about **quality and speed** with, as a result, new process optimization opportunities.

For example, with the invasion of smartphones in the work environment, we all have a camera (and a potential scanner) in the pocket. The problem is the relatively bad quality of **mobile images** preventing companies from considering mobile capture as a **reliable import channel for automatic image classification and data capture**. At IRIS, we have therefore developed a new **AI-powered OCR engine** that drastically increases the

recognition rate on low quality images. Think about B2C companies in the healthcare or the insurance sectors, they can now automatically process images sent by their customers via their IOS or Android applications.

Without releasing any confidential roadmap information, what are the IRIS R&D teams working on at the moment?

I can definitely talk about a couple of our development programs. We are working on AI-powered techniques to improve classification on two types of images: with and without text.

For **text images**, we are using a technique called Logistic Regression based on statistics and Machine Learning. The benchmarks are very positive, the quality of the document classification is appreciably higher.

For **text-free image** classification, we develop

algorithms based on Convolutional Neural Networks (CNN), which is a type of Deep Neural Networks (DNN). A CNN works on pixel level first and then, with each layer, combines the information to create a more high-level representation. For example, the first layer represents pixels, the second layer edges, the third layer car parts (lights, windscreen...), the fourth layer a car, etc. In the end, the highest-level representation is used to classify the document.

As a conclusion, I would say that our mission is not to replace "manual" by "automatic" or old technologies by AI technologies. We aim to develop AI-based applications and process optimization enhancements that are focusing on enabling business results, not just on solving a current problem. We know our partners want to focus on the future business results. And we want to be a partner who can show them how to get there.

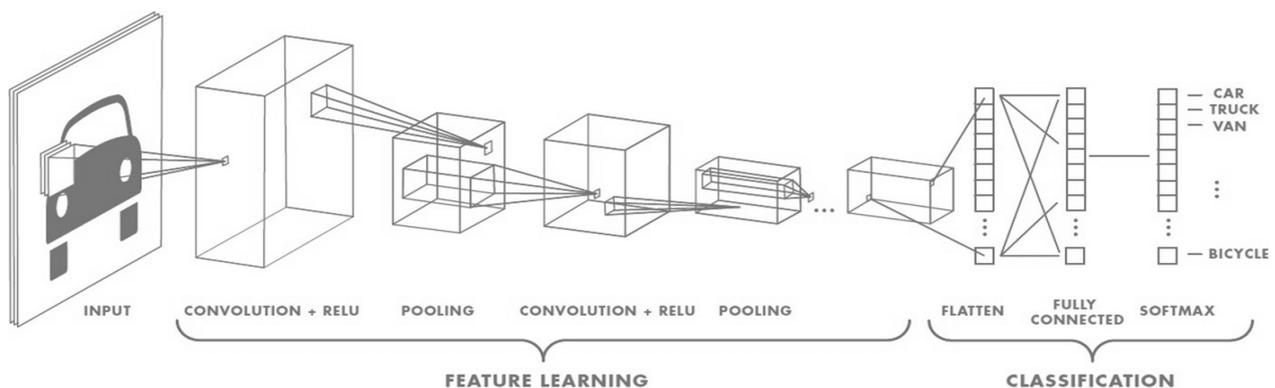


Image: Text-free image classification using Convolutional Neural Networks (CNN)



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ABOUT US

Image Recognition Integrated Systems (IRIS) is a leading provider of 'Content to Process' technologies'. IRIS offers solutions for automatic invoice and order processing, HR and supplier records as well as case management in legal, healthcare, and finance sectors.

IRIS provides technologies and solutions that capture data and information contained in documents, which are relevant to business processes. The goal is to make the data easily available while reducing operating costs.

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