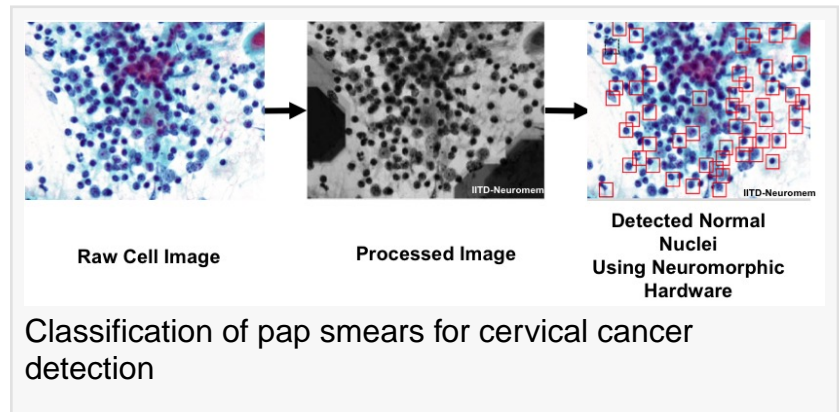


# Artificial Intelligence: Saving Lives and Securing the future

*Artificial Intelligence (AI) is helping security and medicine become more efficient through the use of pattern recognition and improved applications*

SINGAPORE, SINGAPORE, December 3, 2017 /EINPresswire.com/ -- [Artificial Intelligence](#) (AI) is helping security and medicine become more efficient through the use of pattern recognition and improved applications of neural processing locally vis-à-vis moving data offsite to a cloud server.



## Staying Offline versus Going Online

The key challenge with working on Artificial Intelligence systems, is the dependence on high processing requirements using more mainstream technologies, or the high cost of ASICs that are not flexible, need a large amount of customization, and are not easily available – they are not mainstream. Non-local AI solutions need a dedicated connection to a server where the processing of data can take place in a controlled environment.

There are several services that offer cognitive solutions that are hosted on a cloud server – available all the time – but they need the process to provide raw data in a specific format through an API built into an application created to speak to the cognitive services hosted on a server somewhere else in the world. This raises the concerns of security, reliability, while accuracy is the same as processing the data locally. These services are also maintained by third parties, which means that any down times could affect the actual processing of data (although this does not technically happen)

Staying offline poses a range of different options and problems. The first choice is that of what type of hardware – normal computing, Field Programmable Gate Array (FPGA), or Application Specific Integrated Circuit (ASIC)s – each with their own stories of opportunity and problems. If normal computing was selected, then the processing and power consumption would be very high – but the availability and flexibility of applications make it the go to solution for initial testing. The evolution of the solution then takes on the form of an FPGA or ASIC. The solution depends entirely on the nature of the application whether mobile, static, or so completely adverse that it needs a custom solution.

[Neuromorphic](#) technology like that created by [NeuroMem®](#) has been growing and improving, patiently waiting for the market to be ready for its acceptance. Today, the trendy IoT and Big Data applications are steering the demand for high-speed, low-power pattern recognition and machine learning tools and NeuroMem is ready with a commercial, off the shelf, chip with IP available for licensing, and the pleasure of knowing that real-time adaptive learning, also called life-long learning, is the sole privilege of the biology and NeuroMem.

## The research in Facial Recognition and Cervical Cancer

Using Artificial Intelligence has many benefits. To simplify – Artificial Intelligence is the process of training a computer to look for patterns, build a database of information based on the recognition of these patterns, and to build meaningful and accurate outcome based on the training data. The beauty of AI is that every incremental instance of accurately processed information becomes a part of the training data itself. Most people will argue that this is not the case, but what AI does is it processes all new information based on the initial training data and all data it has processed since then to make it more accurate. To sum up, Artificial Intelligence is not just cognitive in terms of processing data but uses machine learning to make the processing more relevant, accurate and valuable.

Dr. Manan Suri, Assistant Professor with the Department of Electrical Engineering, Indian Institute of Technology-Delhi (IIT-Delhi), has been using NeuroMem technology to develop proof of concept neuromorphic/AI applications in fields such as security (facial recognition), and healthcare (to augment diagnosis of cervical cancer from pap smears tests available publicly).

A face recognition system is a computer application capable of identifying or verifying a person from a digital image or a video frame from a video source. One of the ways to do this is by comparing selected facial features from the image and a face database. It is typically used in security systems and can be compared to other biometrics such as fingerprint or eye iris recognition systems. Dr. Suri has been working on making the entire process of Facial Recognition and Speech Recognition, in conjunction with each other, far more accurate and efficient using NeuroMem and their ability to localize pattern matching. His team has been working on a multimodal authentication (person identification) system based on simultaneous recognition of face and speech data using a novel bio-inspired architecture powered by NeuroMem's CM1K chip. The CM1K chip has a constant recognition time, irrespective of the size of the knowledge base, which gives massive time gains in learning and recognition over software implementations of similar methods. What this means is that the system will check for any input against the entire database simultaneously rather than use elimination and matching each set individually. The system can also be trained to retain any incorrect input and disallow any future use of this input through machine learning.

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