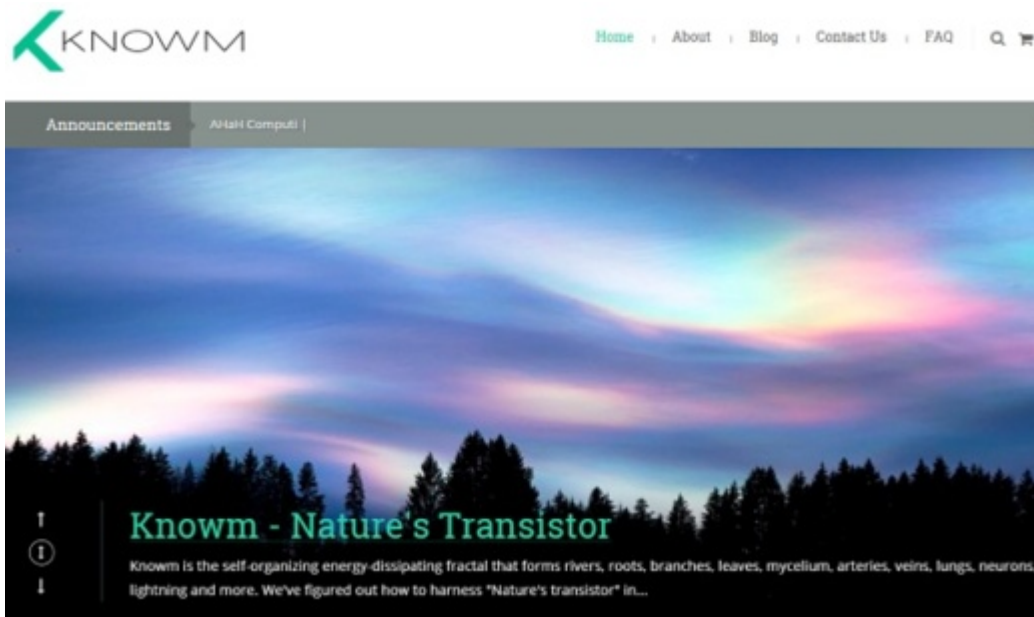


Knownm Launches New Advanced Computing Platform and API

[Knownm](#), a startup specializing in new types of advanced computing architectures and technology, has announced the launch of a brand new platform that allows developers to build intelligent applications powered by Thermodynamic-RAM (kT-RAM) and AHaH technology. The brand new Knownm platform features the [Knownm API](#), a special machine learning library that can be used to build applications featuring real-time data monitoring, pattern recognition, anomaly detection, temporal prediction, and more.



The Knownm platform utilizes two key technologies: [kT-RAM](#) and [AHaH](#). kT-RAM is a new type of physical neural processing unit (NPU) that is memristor-based and allows for the implementation of AHaH computing. kT-RAM provides a general-purpose architecture in which power consumption

is drastically reduced and can be integrated with existing digital platforms, enabling fast, low-power, machine-learning capabilities.

AHaH computing is a theoretical framework for a new computing architecture in which memory and processor are no longer separated but actually combined. The goal of AHaH computing is to eliminate the well-known problem of the [von Neumann bottleneck](#), making it possible to build large-scale adaptive learning systems and other computational environments.

Knowm has announced the official launch of the Knowm platform and API as well as the availability of commercial products such as discrete memristor chips, Knowm Web Application Server, Knowm SENSE Server, Knowm Anomaly App, and more. In addition, the company has launched the Knowm Developer Program, which gives carefully selected and approved developers access to all source code, Knowm API, development hardware, training materials, and other resources. The program also gives developers the opportunity to earn royalties for their contributions and/or premium applications that are made available via the Knowm Application Marketplace.

ProgrammableWeb reached out to Alex Nugent, CEO and co-founder of Knowm, who provided additional information about the Knowm platform and API. Nugent explained that the Knowm platform can be used to implement convolutional neural networks (CNNs) as well as to create CNNs, decision trees, and other types of supervised (and unsupervised) learning.

Nugent also explained that the Knowm API is actually a “direct emulator of an AHaH-based NPU,” providing a core set of functions that emulate different memristor models that third-party applications can programmatically access. He said that the company chose to make the API

available as a Java library because it is a very fast and efficient language that can be connected to distributed real-time computation systems like Apache Storm and large-scale data processing engines like Apache Spark. The company plans on adding support for other languages in the future and also encourages developers to port the API to other languages.

“The availability of the Knowm API provides developers with the opportunity to build out the neuromemristive technology stack by developing new applications and services based on the AHaH Computing framework. Neuromemristive processors will eventually dominate machine learning applications due to the radical efficiency and density gains for synaptic operations,” said Nugent. “We are in an interesting moment in history where this new enabling device is finally available and with AHaH Computing we have a theoretical framework on how to use it for machine learning systems.” Nugent went on to say that:

“We created the Knowm Developer Program to encourage the developer community to leverage the advances Knowm has already made and continue the momentum of innovation, while being both recognized for their contributions and financially compensated. With the industry trending toward more open source solutions we believe our developer program will become a model for projects in the future. This collaborative development ecosystem allows everybody to work together, learn from our collective mistakes and prevent duplication of effort while solving the most basic constraint: generating an income for all the hard work.”

Knowm is just one of many companies developing technology and hardware capable of building and powering intelligent machines and applications. According to a Siemens “Pictures of the Future” online

magazine [article](#), the global market for smart machines is increasing nearly 20% annually and is predicted to reach \$15.3 billion by 2019.

There has been much [debate](#) in recent months regarding the future of Artificial Intelligence (AI) and intelligent machines. Some technology leaders believe that we are heading toward an AI armageddon like Terminator Skynet, while [others are more optimistic](#), believing that intelligent machines could become helpers of mankind or partners like Data on *Star Trek the Next Generation*.

When asked about the possibility of a Terminator Skynet scenario happening in the future, Nugent told *ProgrammableWeb* that there is basically a race right now among companies to achieve and control AI technology. Nugent said that intelligent machines are going to happen and that “it is very important that people learn and understand what intelligent machine technology is and how it is being used.” Nugent also said that when it comes to AI it is important that people have a “rational understanding of what is and what isn’t possible.” The bottom line is that there really is no simple answer when it comes to the potential risks of AI and intelligent machines.

For more information about the Knowm platform, API, and commercial products, visit Knowm.org.