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NUS team's AI engine gets top-level global ranking

Apache Singa ranks among top 300 projects by largest open-source software community

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An artificial intelligence (AI) engine built by a team of National University of Singapore (NUS) researchers has become the first software tool from South-east Asia to be ranked in the top 300 projects by the Apache Software Foundation (ASF), the largest open-source software community in the world.

The software, called Apache Singa, joined the ranks of other Apache top-level projects last month.

It is a platform for deep learning, an AI model that continually analyses data similar to how a human would draw conclusions.

But deep learning is limited by its need for astronomical amounts of data and computing power.

Apache Singa addresses part of this bottleneck by distributing the computing workload across a large number of regular computers without needing an expensive supercomputer, which is out of reach of most businesses and individuals.

The NUS team, led by Professor Ooi Beng Chin from the School of Computing, started working on Singa in 2014. It was officially released in October 2015.

"We saw an increasing demand for deep learning and machine learning platforms from 2012, but there was a lack of platforms which could distribute the computing workload efficiently," said Prof Ooi.

Apache Singa has already been deployed in a variety of uses. Five hospitals here are using it to power an image recognition function on their respective versions of a health app called Foodlg.

Foodlg lets users track their diet and exercise, and is useful in managing conditions such as diabetes, hypertension and high cholesterol.

The AI engine is able to match photos of common local dishes in its database with photos of food taken by users to advise them on their calorie intake.

The version rolled out by Ng Teng Fong General Hospital in January featured a database of over 200 local dishes.

The National University Hospital and Singapore General Hospital are also tapping Apache Singa to analyse MRI and X-ray images to improve the identification of health problems.

Prof Ooi said the Apache top-level projects ranking "is a mark of recognition for Apache Singa, but this is just the beginning".

"We hope that Apache Singa can make an impact on deep learning the same way the Apache HTTP Server did for website servers," he said, referring to the second-most popular open-source web server software used by some 374 million websites.

The Apache HTTP Server was developed by the United States-based ASF, a non-profit organisation that incubates projects from its community of volunteer software developers. Projects that have demonstrated wide application and staying power – such as Apache Singa – graduate to top-level status.

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ANTICIPATING THE NEED

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PROFESSOR OOI BENG CHIN, who led the NUS team that built Apache Singa, on the impetus behind the project.