



CA Technologies Strategic Research Collaborates to Advance Smart IoT Systems and Speed Regulatory Compliance Through Artificial Intelligence and Innovative Development

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European Union Funded Programs Push the Boundaries in IoT Applications and Development of Code to Facilitate Compliance with the General Data Protection Regulation

SANTA CLARA, Calif.--(BUSINESS WIRE)--Jun. 5, 2018-- Today, CA Technologies (NASDAQ:CA) announced that its Strategic Research team will collaborate on three projects funded by the [European Union \(EU\) Horizon 2020](#) program. These projects will enable the secure and smart IoT systems that will underpin a more trusted and connected world, and will explore the development of algorithms and tools required to build compliance into software development processes.

CA Strategic Research scientists explore new technologies, applications and platforms like IoT, robotics, Artificial Intelligence (AI) and more through diverse R&D efforts in partnership with leading research communities in academia, government and beyond.

For IoT, the possibilities are unbounded and include smart cities, transit and infrastructure, among others. But IoT systems are also highly complex, layered, and present fundamental scientific challenges around system resiliency, trust and continuous innovation.

"To realize the massive promise of an IoT-driven world, we must solve complex challenges," said Otto Berkes, Chief Technology Officer, CA Technologies. "These hurdles must be overcome before we can deliver IoT systems that can provide valuable and trusted data, be adaptable and open to new technologies – systems that haven't even been invented yet."

ALOHA for Deep, Secure Learning

A smart security system that gathers data from IoT devices needs to ensure that the AI-based decisions from that data are not producing biased results. The ALOHA (Adaptive Learning on Heterogeneous Architectures) project aims to improve human decision-making in IoT applications.

ALOHA will explore how a type of AI, known as 'deep learning', can be embedded in IoT applications to imitate biological neural networks and acquire human-like learning capabilities. This work also exploits the increasing compute capacity of edge devices that provide an entry point into enterprise or service provider core networks -- like routers and servers -- and their ability to support the execution of AI algorithms.

CA's Security expertise will contribute a depth of understanding to this project which is critical to creating bias-free AI. "CA's goal through ALOHA is to learn from experience and react autonomously to a surrounding environment, while avoiding AI bias," says Victor Muntés, vice president of Strategic Research, CA Technologies.

ENACT for Smarter IoT

Today, smart railway systems require an IoT system comprised of multiple applications. Exposing vulnerabilities early on in the software development process could prevent a major system failure. The ENACT project aims to drive faster innovation across trustworthy, smart IoT systems through new development, operation and security applications that span IoT, edge and cloud infrastructures.

In addition to developing smart home e-health applications, this pioneering research will also help to build AI-based self-diagnosis for smart operation, which will eventually enable trains to "learn" and predict anomalies. These "smart trains" will also need advanced simulation models to ensure IoT system and application security as edge devices are continuously added in the future.

As a leading partner in the project, CA Technologies will push the boundaries of continuous delivery, agile operation and security technologies and processes designed for smart IoT systems.

"In the future, all devices will ultimately be connected. ENACT research will help transform the understanding of how trusted, smart IoT systems can be developed and operated in our fast-changing environment," says Muntés. "CA's deep expertise in the enterprise, combined with insights from our Strategic Research, aims to contribute to a more trusted, connected world and transform concepts into breakthroughs."

PDP4E for Better Privacy and Personal Data Protection

[The General Data Protection Regulation \(GDPR\)](#) is a new and comprehensive law that requires businesses and governments to protect the personal data and privacy of individuals in the EU*. The regulation has a global impact and cuts across all sectors with non-compliance potentially resulting in massive fines. GDPR is expected to set a new standard not only for consumer rights regarding their data, but also companies challenged with putting systems and processes in place to comply.

The Privacy and Data Protection for Engineers (PDP4E) project will address the protection of personal data, and explore how to better enable the development of code that allows companies to comply with GDPR, by enabling engineers with tools to integrate data privacy during the development process (or "Privacy by Design").

CA's research for PDP4E will support the development of tools and processes that enable data privacy, facilitating GDPR-compliance for organizations as they create new applications. The research will also explore algorithms for classifying documents with personal information and without it to simplify the detection of the content that is subject to data protection regulation.

"As we rely on AI and new development processes to uncover ways to make GDPR compliance easier, our goal is to reduce the burden and potential financial impact that this regulation could impose on organizations while streamlining compliance," said Muntés.

In collaboration with the EU, CA's research creates opportunities that accelerate ideas to outcomes. Projects span next generation infrastructure, security and privacy, and new business models and processes. Muntés continues, "For example with ALOHA, CA will also focus on exploring how agile methodologies can be used when embedding deep learning in our applications." CA's projects are conducted through the Office of the CTO and led by a team of distinguished

researchers, engineers and staff. To date, CA Strategic Research has published more than 75 papers, and has been granted more than 70 patents.

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About CA Technologies

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Rita O'Brien, 631-342-6687

Public Relations

rita.obrien@ca.com