NSA and University of Texas: Joining Forces in Machine Learning

It takes a combination of research, innovation, collaboration to invent the future. NSA, through a partnership with the University of Texas System (UT System), plans to use this approach to address national challenges in the field of machine learning.

The NSA Technology Transfer Program (TTP) recently signed a five-year agreement between NSA and the UT System to jointly address challenges in the areas of machine learning, innovation capability development, and Internet of Things (IoT). The Cooperative Research and Development Agreement (CRADA) provides a flexible framework for both parties to explore these areas in order to solve specific problems at their respective organizations. This research partnership will complement and accelerate ongoing research efforts at NSA, potentially resulting in development breakthroughs for mission.

Movement has already started on many of the CRADA's work plans, including a collaboration with an NSA in Texas cyber office and the University of Texas at San Antonio (UTSA)'s Center for Security Enabled Cloud Computing. The two-year effort focuses on anomaly detection and insider threat activity inside high performance computing (HPC) systems.

Though there are existing methods of detecting anomalies in data, the methods are primarily restricted to stable, non-complex application models and require significant computing resources. This partnership provides NSA researchers with direct access to UTSA faculty, their research, and the supercomputing resources of the Texas Advanced Computing Center (TACC), housing one of the largest supercomputers in the world. The discoveries resulting from this engagement will benefit both parties.

The success of this research collaboration may lead to computationally efficient techniques that significantly improve the defensive posture of critical infrastructure computing systems across the nation. Initial plans for the collaboration will focus on the detection of insider threat indicators using low-cost network data, which will serve as a benchmark to evaluate the inclusion of high-cost, host-based data in later stages of the project. Additionally, this partnership will serve as a baseline for further collaborations on mission critical efforts concerning cybersecurity, cloud computing, analytics, machine learning, and data visualization. The partnering teams are working to develop a source of data that can be shared between the UTSA and NSA ecosystems.

About the NSA TTP

The NSA TTP establishes partnerships between NSA and industry, academia, and other government agencies to help accelerate mission, advance science, foster innovation, and promote the growth and commercialization of technology originally created for Agency mission.

Questions? Contact NSA's Technology Transfer Program

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