

High Performance Data Analytics



S&T Campaign: Computational Sciences
Data Intensive Sciences

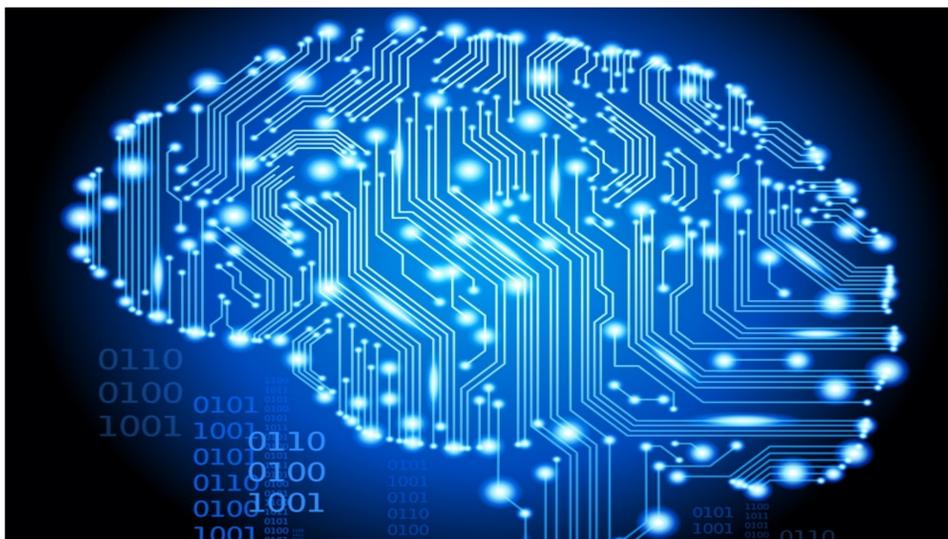
David Bruno, 410-278-8929
 David.bruno@us.army.mil

Research Objective

- To develop a machine learning capability at the Army Research Laboratory utilizing DoD Supercomputing Resource Center (DSRC) resources for support.
- Develop state-of-the-art machine learning methodologies based on current machine learning algorithms

ARL Facilities and Capabilities Available to Support Collaborative Research

- A 101,000 processor core super computer with up to 4.48 PetaFlops of capability will be available for our use in December 2014 (Excalibur).
- Also we have available a large scale heterogeneous system composed of 5000 CPU/450 GPU nodes.



Excalibur

Challenges

- As this is an inherently cross-disciplinary topic, we will need to work closely with domain experts as we apply machine learning methods to new types
- Algorithms are tuned and interpreted based on expert analysis of their output. Without the context from subject matter experts the output from this process is not meaningful.
- This is a very popular research area and staying abreast of all the state of the art research trends will be difficult.

Complementary Expertise/ Facilities/ Capabilities Sought in Collaboration

- Experience/background in machine learning.
- Any ongoing research problems with big data sets which could benefit from ongoing analysis.
- Past work on novel machine learning algorithms would be especially beneficial.

