

## **Abstract for PRACEdays19 Call for Contributions**

from Brendan McGinty, bmcginty@illinois.edu, University of Illinois at Urbana-Champaign

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### **The novelty / originality of the project:**

As the influx of big data and HPC becomes more prevalent, academic institutions, supercomputing centres, and government agencies around the world want more interaction with and funding from industry to expand their revenue sources.

With more than 30 years of leadership in industrial HPC, the National Center for Supercomputing Applications (NCSA) at the University of Illinois at Urbana-Champaign (UIUC) is the largest and most decorated program of its kind in the world.

Our presentation will focus on real-life successes in addressing grand industrial challenges, discuss the near-term future, and engage in questions.

### **Need for HPC / how HPC was instrumental in obtaining results:**

With applied/industrial domain experience in multiple domains, including data (AI, machine/deep learning, geospatial), bioinformatics, modeling and simulation, and visualization combined with superior cyber infrastructure expertise and resources, HPC is utilized in everything we do.

Each of our over 40 industrial partners use some or all of our expertise and resources. Our more experienced and long-standing partners learn and “graduate” from us, becoming self-sufficient in leveraging HPC solutions. Some of our partners use us for consulting only, others for compute only, while many utilize both. HPC is core to our longevity as well as our recent growth caused by the data explosion.

### **Forward-looking statement demonstrating relevance to innovation in industry:**

HPC is in the midst of seeing a convergence between traditional HPC applied solutions and AI, as more companies want or *think* they need AI to benefit their companies. Machine and deep learning helps companies truly innovate, creating business intelligence and efficiencies like never before, in a concert between applications and evolving hardware.