# Quad Chart for: CAML - Accelerating Machine Learning via Campus and Grid at University of Notre Dame

Challenge: To to accelerate machine learning across the displines at all stages from exploratory to large scale

- Machine learning (ML) exploration requires interactive access and possibly experimental hardware
- Large scale ML requires batch resources
- Balancing these competing needs across a campus requires a flexible resource
- Focus on ML but also benefit other applications accelerated by GPUs

Solutions:

- Supply a GPU cluster with hardware optimized for ML
- Configure the batch system of the cluster to serve both interactive and batch jobs
- Integrate cloud resources to provide access to bleeding edge experimental accelerators or burst capacity for coursework or workshops.
- Configure the resource for efficient sharing via OSG, integrating OSG technologies (i.e. software and data sharing services) into design from outset.
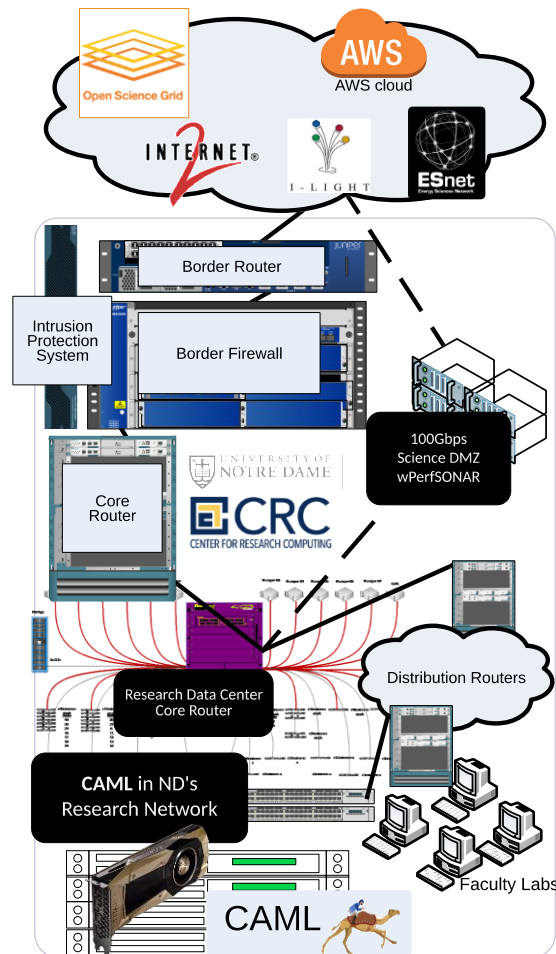
Scientific Impact:

- Accelerate exploratory ML by providing interactive resources for parallel investigations by group members
- Accelerate mature ML efforts by providing capacity to scale
- Impacts felt across ND campus and nationally through OSG access

Metadata tag:

- *Status: Reviewing quotes for hardware acquisition*
- *Collaboration with OSG on access, especially interactive access via OSG*
- *Interested in collaboration with other clusters that provide GPU resources over OSG*
- *Example research enabled:* https://ccas.nd.edu/
- *CRC:* https://crc.nd.edu/