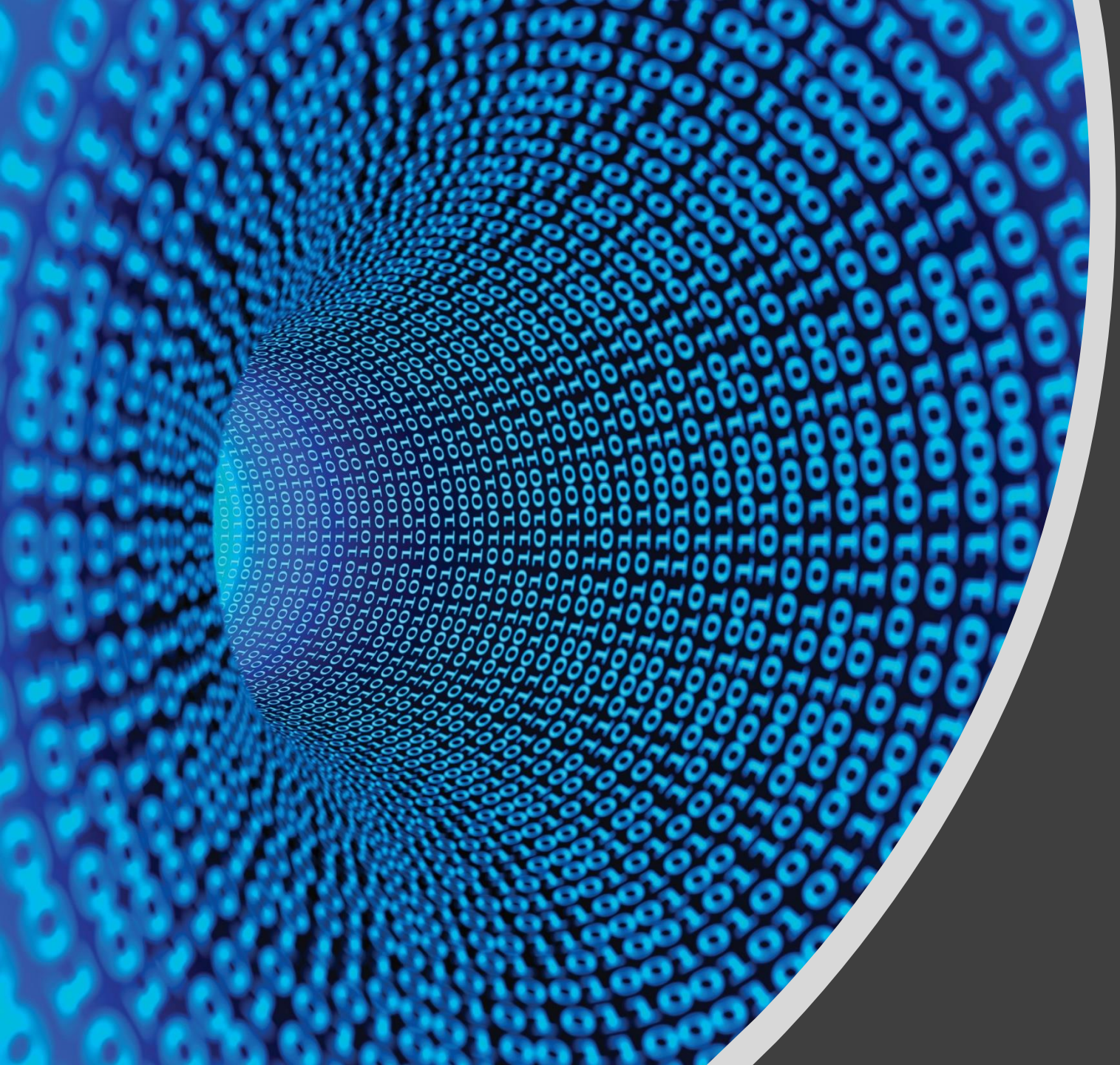

Driving Innovation with Advanced Computing

SSCIP

SMART COMPUTING FOR INNOVATION

ABOUT SOSCIP

- Collaboration between member institutions (academic and industry) and Ontario-based companies.
- Mission to build partnerships that foster **industry adoption** of **AI and data science solutions** in Ontario.
- Support **industry-academic collaborative projects** through **partnership-building services** and access to **leading-edge advanced computing platforms.**
- Projects from **any sector** and **any discipline** and **funded by any program** are eligible to apply.

SOSCIP
SMART COMPUTING FOR INNOVATION

ABOUT SOSCIP

Consortium Members

Carleton University
Queen's University
OntarioTech University
Western University · Canada
University of Toronto
Ryerson University
University of Windsor
University of Waterloo
University of Guelph
Wilfrid Laurier University – Laurier – Inspiring Lives.
uOttawa
Seneca
McMaster University
Lambton College
York University
St. Clair College

Industry Members

IBM
Unilever
Nuclear Innovation Institute
Loblaw Companies Limited
DAIR

Partners

Ontario
Canada
NSERC CRSNG
OCI – Where Next Happens
Compute • Calcul Ontario
Mitacs
SciNet
ORION – Empowering Innovation
SHARCNET
AI Partnerships Corporation

- One of Canada's only R&D consortia bringing **advanced computing** directly to industry.
- We build partnerships to solve industry challenges and align the **tools and funding** needed to ensure success.

SOSCIP
SMART COMPUTING FOR INNOVATION

WHAT WE DO

SOSCIP provides:

Access to leading-edge technology

- Sophisticated computing infrastructure
- Specialized software
- Dedicated technology experts

Research partnership expertise

- Streamlined access to talented academic experts
- Collaboration building and partnership support
- Access to research funding programs and grant application support

SOSCIP helps companies:

- Commercialize new products and services
- Improve business processes
- Increase sales
- Create new jobs
- Grow companies

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SMART COMPUTING FOR INNOVATION

SOSCIP COMPUTING PLATFORMS

CLOUD ANALYTICS

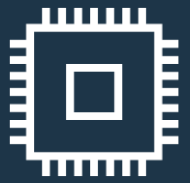
- OpenStack-based cluster
- User-managed virtual machines

- Machine Learning
- Real-time Analytics
- Image/video Processing
- Text Analytics
- Medical Records Analytics
- Energy Systems Data Analytics
- Cybersecurity

PARALLEL CPU PLATFORM

- Homogeneous HPC cluster
- Distributed/Parallel computing

- Bioinformatics
- Molecular Dynamics
- Drug Discovery
- Quantum Chemistry
- Materials Science
- Computational Fluid Dynamics
- Climate/Weather Simulation



GPU PLATFORM

- Heterogeneous HPC cluster
- GPU-accelerated computing

- Deep learning
  - Language Modelling
  - Image/video Analysis
  - Physics/Chemistry Modelling
- Simulation
  - Molecular Dynamics
  - Geomechanics
  - Climate Simulation

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HOW TO ACCESS SOSCIP PLATFORMS

- Industry-Academic Collaborative Project (IACP)
- Entrepreneurship Initiative
- Fee-for-Service

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GENERAL FOCUS AREAS

- ❑ Advanced Manufacturing
- ❑ Smart Cities
- ❑ **Health & Life Sciences**
- ❑ Energy/Mining
- ❑ Digital Media
- ❑ Business Analytics
- ❑ Environment/Water
- ❑ Cybersecurity
- ❑ Agriculture
- ❑ Aerospace/Defence

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CONTACT INFORMATION

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Visit **soscip.org** for more information

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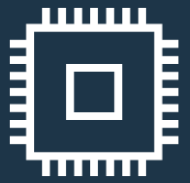
SOSCIP COMPUTING PLATFORMS

CLOUD ANALYTICS

- Running on a cluster of Intel Xeon and IBM Power hypervisors
- 4672 CPU cores, 30TB of RAM, and 1.4 PB of disk storage
- 60 NVIDIA P100 and 16 NVIDIA T4 GPUs
- Supports Red Hat Enterprise Linux, Ubuntu OS
- IBM analytics software including Streams, Cognos Analytics, DB2 and others

PARALLEL CPU PLATFORM

- 2880 core-equivalent allocation on Niagara supercomputer
- Each compute node (based on Lenovo SD530 server) has 40 Intel Skylake/Cascade-Lake cores with 202GB (188 GiB) of RAM
- A fast 100Gbit Infiniband network is connected in a ‘Dragonfly+’ topology with Adaptive Routing



GPU PLATFORM

IBM Power System AC922 powered by NVIDIA Tesla V100 GPUs and IBM Power9 CPUs:

- 148 GPU-equivalent allocation on SOSCIP-SciNet cluster Mist
- 54 IBM AC922 servers each with 2×16 core Power9 GPU and 256GB RAM
- Each compute node has 4 NVIDIA Tesla V100-32GB GPUs
- GPUs under the same CPU socket are connected to each other and to the CPUs via NVLink
- The OS is Red Hat Enterprise Linux 8 for power9 (Little Endian)

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