Ian Stavness
Associate Professor, Computer Science
www.usask.ca
USask

⇒ UBC

⇒ Stanford

⇒ USask (Comp Sci, since 2012)

Co-lead P2IRC Flagship 3:
Deep Learning for Phenomics
collaborators

Mark Eramian  
Kevin Stanley  
Carl Gutwin

Steve Shirtliffe  
Kirstin Bett  
Curtis Pozniak  
Sally Vail  
Christina Eynck  
Isobel Parkin  
Bobbi Helgason  
Steve Siciliano
what methods do we develop

- Modeling (mechanistic, Bayesian)
- Machine learning (hand-selected features)
- Deep learning (learned features)

what tools do we use

- GPU Servers (Copernicus), Cameras, Python
Aerial Image Analysis

https://plotvision.usask.ca
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Stress Response Phenotyping

https://github.com/p2irc/lsplab


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Domain Adaptation

https://github.com/p2irc/uda4poc

Global Wheat Competition
what would I like in a food-water nexus

- Computer science as a research pillar and a technology platform

- Research problems:
  - Learning across scale and modality
  - Using field measurements to calibrate aerial analyses
  - Generating actionable information and useful tools

- Training programs, e.g. CMPT/PLSC 898
big question for the group

What *new data analysis* would transform your experiment?

Can we be the *world leader* in food-water *data*?