Alberta Machine Intelligence Institute

Driving the Future of Machine Intelligence

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About Amii

• Non-profit focused on making Alberta the **premier destination** for **foundational research** and innovative **commercial application** of AI

• Amii/UAlberta are **top 3 worldwide** in AI & machine learning research

• World leader in applying AI to **diverse areas**: energy, healthcare, environment, etc.

• Home Dr. Richard Sutton and Reinforcement Learning

Amii is supported by:
Four Focus Areas

**World Class Research + Training**
Amii supports world-class research at UAlberta – funding professors, researchers and students.

**Grow SME AI Capacity**
Amii guides AB-based startups & SMEs as they build their own AI capabilities to drive their next wave of competitive advantage and growth.

**Attract Research Labs**
Amii works with large corporations to set up research labs to leverage UAlberta’s world-class researchers and grads.

**Upskill Alberta’s Workforce for AI**
Amii provides training and mentorship for Alberta workers to drive AI literacy and ensure our workforce has the skills to succeed in AI.
What is AI?
Artificial Intelligence & Machine Learning

- **Artificial Intelligence** gives machines the ability to perform tasks that normally require human-level intelligence

- **Machine Learning** allows computers to learn from and adapt to data without explicit programming for the new data

Ultimately, AI is about making **predictions from data**
Why Now?
Moore’s Law + Kryder’s Law

www.extremetech.com%2Fextreme%2F210872-extremetech-explains-what-is-moores-law&psig=AOvVaw0d7Y0DsOl24vYd4WcGr_b&ust=1537413994958111

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Cheaper Prediction

• As the cost of something drops, the more it is used
• The **cost of prediction is dropping**
  • Cheaper computing power = more processing
  • Cheaper storage = more data
  • More efficient algorithms = more powerful learning algorithms
• Drops in the cost of prediction *increase the value* of data, sensors, connectivity
• Data improves the value you get out of prediction – to a point…
Autonomously Interacting with the World

• Increasingly, sensor and control networks **operate autonomously**

• Reinforcement learning systems **continually learn** from their ongoing operation for long-term optimization

• RL systems update operations in **changing** environments

• Used for **optimizing** industrial control, autonomous drones/robots, edge computing, etc.
Every company is a data company

Data-driven predictions will change every industry
Find Us Online

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