

# **Alberta government awards \$10 million in continued funding for the next 5 years (Phase Two) to the Alberta Ingenuity Centre for Machine Learning**

**Come join us on October 22 at 9:30 AM at AICML on the University of Alberta campus to see machine learning in action**

The Alberta Ingenuity Centre for Machine Learning (AICML) celebrates the launch of “Phase Two” with a reception showcasing AICML’s machine learning applications in several key research areas. AICML is a world renowned machine learning centre proudly located on the University of Alberta campus. Over the past six years or “Phase One”, saw AICML established itself as one of the top three machine learning research and development post-graduate centres in the world.

What does a world class research centre do here in Alberta? It attracts and trains some of the best young minds from Alberta, Canada and the world to come to Alberta to study and train with the Centre’s renowned Principal Investigators. Specifically, 133 PhD, 57 PDF, 131 MSc, 158 RAs, and 135 EHQP students, of which 77 have remained in Alberta to work, have benefitted from AICML. It also means over 267 machine learning publications the majority in top-tiered venues and with a 70% rate of co-authorship from these highly talented students.

Phase Two will now focus on maintaining and expanding on AICML’s world class recognition while at the same time begin to actively and aggressively translate AICML’s research into commercial realities. AICML through its newly created and privately funded development and commercialization company, Myriad Machine Learning, Inc. (M2L), will begin an industry collaboration initiative to direct new research to solve problems that are relevant to industry and successfully transfer these solutions, through M2L, for the benefit of Alberta. This translation of knowledge into products requires both the strong support of industry and the continued support of government. Thus, the Alberta Ingenuity Centre for Machine Learning is an excellent model for this type of combined partnership for Alberta.

M2L and AICML have identified and will target key industry sectors that are critical to maintaining Alberta’s competitive advantage. These industry sectors are healthcare and health analytics, energy and environment, financial computation and modeling, and education. The management teams from AICML and M2L are now negotiating a number of industry partnerships for research collaboration and commercialization. Specific details of these partnerships will be made public in the near future, stay tuned.

AICML will showcase the following demonstrations on Thursday, October 22, 2009:

**The Brain Tumour Analysis Project:** “Saving Healthy Brain Tissue” The project will assist doctors in locating and segmenting brain tumours from healthy tissue by using a machine learning system that predicts how brain tumours will grow and where.

**Second Look:** Breast Cancer Visualization and Detection Tool: helps radiologists and oncologists diagnose medical images effectively and with improved speed. Second Look highlights regions of

interest in a medical image, for which the physician can focus on, while using machine learning algorithms to remember and learn how to better highlight regions of interest for the human physician.

**Medical Analysis of Cancer Cachexia:** Cancer Cachexia is a significant loss of muscle tissue and is difficult to detect and quantify in cancer patients. Machine learning solutions are being investigated to use in a quick, non-invasive blood or urine test to detect earliest stages of Cancer Cachexia this could improve patient quality and length of life.

**Canadian Bio-sample Repository:** a tool designed to control robotic processing, storage and retrieval of biologic samples and efficiently track sample inventory. This system is designed to be part of the National Institute of Health (NIH) csBIG information network. Efficient sampling, processing, storage and picking of samples will promote discovery in medicine and agriculture in Alberta.

**Advanced Visualization via the Internet:** The Calgary Scientific team created the Resolution MD visualization web server to perform advanced visualization in real time. This application was extended to Apple Inc's new iPhone 3G. Now doctors can perform advanced visualization from a device in their pocket, assisting doctors, doctors on call, improve communication with patients, and better patient outcomes.

**Critterbot:** Intuitive computer reasoning using a machine learning program and demonstrative in a small autonomous mobile robot affectionately named the "Critterbot". The Critterbot independently moves around say a room and learns on its own, it remembers, how to navigate the room in the most efficient way.

**Meerkat:** is a machine learning tool developed to help practitioners better comprehend and analyze vast amounts of data in the form of social networks, identifying groups or objects that are meaningfully connected. Other social network applications are being explored by AICML for this type of machine learning tool.

**Health Data Warehouse Project:** Effectively linking inpatient, outpatient, census, long-term care, cancer registry and palliative care data in a machine learning data base environment with the ultimate outcome to improve quality of health care in Alberta.

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