Department of Computing Science
FACT SHEET

Overall Areas of Strength of the CS Department

Advanced Man-Machine Interfaces
Investigates interactions between humans and machines in natural and artificial environments

Algorithmics
Identifies problems, categorizes each problem according to its complexity and searches for an efficient algorithm

Artificial Intelligence
Involves both basic and applied research, leading to the development of computational theories of intelligence

Bioinformatics
Application of computing science techniques to solve problems in biological and medical science

Communication Networks
Focuses on data communication protocols, networks, and performance

Computer Games
Produces high-performance, real-time programs for strategic game-playing

Computer Graphics
Research ranges from investigation of algorithm complexity to the design and implementation of systems for algorithms

Computer Vision and Multimedia Communications
3D multimedia representations for efficient online visualization

Database Systems
Organization and storage of data, information retrieval, and data management

Machine Learning
Provides tools and technologies for finding significant patterns in data. It is most appropriate in information processing situations where training data (such as a database of case studies) is available and it is difficult (or not cost effective) to “engineer in” the solution

Reinforcement Learning
Developing a mode of intelligence that could approach human abilities

Robotics
Collective robotics, visual robot navigation, visual servoing, predictive display for tele-robots and mobile manipulation

Software Engineering
Tools, methods, theories, and techniques to support the development of software

Software Systems
Designs and develops transparent and efficient software systems
Research Centres
Alberta Innovates Centre for Machine Learning (AICML)
Centre for Intelligent Mining Systems (CIMS)
Multimedia Research Centre (MRC)

Operating Budget
Operating Budget 2011-12: $11.7M
Research Funding Received 2011-12: $17.7M

Faculty, Staff, Students
Faculty: 44
Staff: 22
Post Doctoral Fellows: 18
Undergraduate Students: 437
MSc Graduate Students: 127
PhD Graduate Students: 132

Highlights of Chairs
Pierre Boulanger – iCORE/TR Labs Industrial Research Chair *(Collaborative Virtual Environments)*
Jonathan Schaeffer – iCORE Chair/Canada Research Chair *(High Performance Artificial Intelligence)*
Dale Schuurmans – Canada Research Chair *(Machine Learning)*
Eleni Stroulia – iCORE/IBM/NSERC Industrial Research Chair *(Services Systems Management)*
Rich Sutton – iCORE Chair *(Reinforcement Learning and Artificial Intelligence)*
Hong Zhang – iCore/Syncrude/Matrikon/NSERC Industrial Research Chair *(Intelligent Sensing Systems)*

Cross Appointments
David Wishart – Computing Science and Biological Sciences (Omics)

Co-op and Internship Opportunities
Industrial Internship Program (IIP)
16-month placements in industry after completion of third year of BSc
Number of students currently in IIP: 31
Current IIP Employers:
- Electronic Arts (Bioware)
- EMC
- GE Intelligent Platforms
- Haemonetics
- IBM Canada Ltd.
- Intuit
- Pason Systems
- Research in Motion (RIM)

Ross and Verna Tate High School Internship Program (HIP)
Approximately 25 high school students work in our labs for six weeks each summer
Peer-to-Peer Interaction (Members Group)
   Computing Science Advisory Board

Recruitment Opportunities
   Monthly industry talks for undergraduates
   Technical talks for graduate students

Outreach Initiatives
   Iverson Exam
   Summer Camps
   Women in Technology (WIT) and WISEST
   Ross & Verna Tate High School Internship Program (HIP)
   Google CS4HS Teachers Symposia and Work Fairs

Research Collaborations

**Canada**
- Glenrose Rehabilitation Hospital
- IBM Center for Advanced Studies (CAS)
- PrioNet - research into prions
- Westgrid - high performance computing

**USA**
- Google, Mountain View and Waterloo
- Stanford University, Stanford, CA
- University of Texas, Austin
- Yahoo! Research, Santa Clara, CA

**South America**
- EAFIT University, Medellin, Colombia
- Los Andes University, Bogota, Colombia
- University Federal de Minas Gerais, Brazil

**Europe**
- INSA, Lyon
- Karlsruhe Institute of Technology, Karlsruhe
- La Salle University, Barcelona
- Ludwig Maximilians Univeristät (LMU) Munich
- Technical University of Munich (TUM)
- Université Paris-Sud (Paris 11)
- University Roma Tre, Rome

**Asia**
- Guizhou Institute of Science, Guiyang, China
- Hokkaido University, Japan
- Indian Institute of Technology, Kharagpur
- NICTA, Canberra

Key Event Sponsorships
   Programming Team – ACM Competition
   Fall Open House

UNIVERSITY OF ALBERTA
DEPARTMENT OF COMPUTING SCIENCE
Scholarships

High School
Iverson Exam Prizes

Undergraduate
Amdahl Academic Achievement Scholarship in Computing Science
Barry J Mailloux Prize in Computing Science
Canadian Information Processing Society Scholarship
CIPS Stan Heaps Memorial Scholarship
CIPS Donald B Scott Memorial Prize in Computing Science
Dirk Snoeck Henkemans Memorial Scholarship
Dr Brian Pinchbeck Memorial Industrial Internship Prize
Gold Medal
Haemonetics Software Solutions Computing Science Scholarship
Intuit Canada Undergraduate Scholarship in Computing Science
Kao Family Eisenco Scholarship
Kathryn O’Donoghue Ward Memorial Scholarship
Mark Van Mechelen Scholarship in Computing Science
Terence Holowach Memorial Prize

Graduate
NSERC CGS and PGS
AITF Academy Awards
Provost’s Entrance Scholarships

Contact

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