

CRISTINA POP

Stanford, CA USA

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OBJECTIVE To contribute to the field of bioinformatics and enhance understanding of biological systems through computational tools and mathematical models.

EDUCATION

2008-present **Doctor of Philosophy (PhD) Student**
Computer Science
Stanford University
Degree Expected: *May 2013*
Stanford University
Stanford, CA 94305
USA
Tel: 650-723-2300

2003-2008 **Bachelor of Applied Science (BASc)**
Computer Engineering, Honours Mathematics Option
The University of British Columbia (UBC)
Degree Conferred: *May 2008 with Distinction*
Ranked:
1 of 118 students in Year 4, Electrical and Computer Engineering
2 of 250 students in Year 3, Electrical and Computer Engineering
3 of 375 students in Year 3, Faculty of Applied Science
1 of 229 students in Year 2, Electrical and Computer Engineering
The University of British Columbia
2329 West Mall
Vancouver, BC V6T 1Z4
Canada
Tel: 604-822-2211

ACADEMIC AWARDS AND DISTINCTIONS

2008 Faculty of Applied Science Prize for Academic Excellence, UBC
Awarded to 1 out of ~600 graduating UBC students in the Faculty of Applied Science.

2008 Natural Sciences and Engineering Research Council of Canada Postgraduate Scholarships:
Alexander Graham Bell Canada Graduate Scholarship (declined) and Postgraduate Scholarship M
Canada Graduate Scholarship awarded to top-ranked Postgraduate Scholarship applicants, for academic excellence, research potential, and communication / interpersonal / leadership skills.

2008 Computing Research Association Outstanding Undergraduate Award - Honorable Mention
Awarded to North American undergraduates with outstanding potential in computing research.

2006 PMC-Sierra Founders Award in Electrical and Computer Engineering, UBC
Awarded to 1 UBC electrical / computer engineering student for academic achievement, entrepreneurship, leadership, interest in integrated circuit and communication system design.

2006 Microsoft Technical Scholarship
Awarded to students studying in the United States, Canada, and Mexico, who show passion for software and academic excellence.

2005 MDSI Mobile Data Solutions Inc. Peter Kam Memorial Scholarship, UBC
Awarded to 1 out of ~400 UBC electrical / computer engineering students in 3rd or 4th year.

2005 UBC Golden Key Honour Society New Inductee Scholarship
Awarded to 5 out of ~800 new members who showed outstanding scholastic ability.

2004 Leslie and Greta Carter Memorial Engineering Scholarship, UBC
Awarded to 1 out of ~600 UBC students entering 2nd year engineering.

2004 UBC Nomination for C.D. Howe Memorial Engineering Award

2004 The Canadian Club / Weyerhaeuser SOARS "Academic Award"

2004 Featured in *Ingenuity - UBC Faculty of Applied Science Engineering News*, "Applied Science's bright young stars", Fall/Winter Issue 2004

2004-2007 Dean's Honour List, UBC

2003-2007 Undergraduate Scholarship Program Award, UBC
Awarded to UBC students with academic achievement (over 85% on their best 27 credits).

2003-2007 IBM Canada Limited Pacific Development Centre Scholarship
Awarded annually to 10 Canadian students entering a BC university in fields in computing.

PROFESSIONAL EXPERIENCE

- 2008** Research Assistant
May-Aug Supervisor: Dr. Anne Condon, Computer Science, UBC
- integrated two energy models for RNA secondary structure prediction with a heuristic prediction algorithm and a program for tuning the energy model parameters
- 2007** Undergraduate Student Research Award Recipient, Natural Sciences and Engineering Research Council of Canada (NSERC)
May-Aug Supervisor: Dr. Anne Condon, Computer Science, UBC
- implemented pseudoknot energy models into a C++ algorithm to compute the energy of RNA structures and into a C++ heuristic algorithm for RNA secondary structure prediction
- 2007** Undergraduate Teaching Assistant, Honours Integral Calculus, Mathematics, UBC
Jan-Apr
- marker duties: marked tests and weekly homework assignments
- 2006** Undergraduate Student Research Award Recipient, NSERC
May-Aug Supervisor: Dr. Anne Condon, Computer Science, UBC
- implemented and tested a general and efficient RNA secondary structure prediction algorithm based on hierarchical folding, in Haskell and C++
 - created a tutorial on the algebraic dynamic programming technique used in implementation
- 2006** Undergraduate Teaching Assistant, Linear Systems, Mathematics, UBC
Jan-Apr
- lab duties: supervised students and assisted them with Matlab problem sets
 - marker duties: marked tests and weekly homework assignments
- 2004** Undergraduate Student Research Award Recipient, NSERC
May-Aug Supervisor: Dr. Joel Friedman, Mathematics, UBC
- investigated the Ramanujan property of graphs
 - created C++ and Matlab programs to model and test graph properties

PUBLICATIONS

- 2007** Hosna Jabbari, Anne Condon, Ana Pop, Cristina Pop, and Yinglei Zhao. "HFold: RNA Pseudoknotted Secondary Structure Prediction Using Hierarchical Folding" (2007) *7th Workshop on Algorithms in Bioinformatics (WABI)*, Philadelphia, USA. *Algorithms in Bioinformatics, Lecture Notes in Computer Science (LNCS)* 4645:323-334.

CONFERENCES & PRESENTATIONS

- 2007** RiboWest 2007 Conference, University of Northern British Columbia, Prince George, Canada
- talk: "HFold: RNA Pseudoknotted Secondary Structure Prediction Using Hierarchical Folding"
- 2007** Bioinformatics Reading Group, Bioinformatics and Empirical & Theoretical Algorithmics Laboratory, UBC
- talk on: "Predicting RNA pseudoknot folding thermodynamics" by Song Cao and Shi-Jie Chen (2006 *Nucleic Acids Research* 34:2534-2652)
- 2007** *ideas 2007* Open House, Electrical and Computer Engineering, UBC
- invited poster: "Synthesis of Initial Conditions for Biological Simulations of Hybrid Systems"
- 2007** Multidisciplinary Undergraduate Research Conference, UBC
- poster: "Synthesis of Initial Conditions for Biological Simulations of Hybrid Systems"
- 2006** RiboWest 2006 Conference, University of Northern British Columbia, Prince George, Canada
- poster: "Hierarchical Model for Pseudoknotted RNA Secondary Structure Prediction"

COMPUTER SKILLS

<u>Programming</u>	<u>Software Technologies</u>	<u>Operating Systems</u>
C, C++, HTML (fluent)	Microsoft Visual Studio .NET	Windows 98 / XP / Vista
C#, Java, Matlab, Perl (comfortable)	Eclipse Java IDE	Linux
Haskell, R, SQL, VHDL (basic knowledge)	ASP.NET and HTML	

NOTABLE PROJECTS & ACTIVITIES

- 2008** Numerical methods for solving differential equations (written in Matlab)
- 2007** Hybrid systems modeling (analysis of reachability and verification techniques and tools for modeling and simulation of tryptophan regulation)
- 2006** Distributed collaboration tool for chatting and shared file editing (written in Java)
- 2006** Image processing algorithms for tracking small objects (written in C, C++, Matlab)
- 2005** Simple multi-cycle CPU (VHDL description)
- 2005** CPU simulator based on several CPU scheduling algorithms (written in C++)
- 2005** Simple Linux shell (written in C)
- 2005** Voice synthesis review (analysis of fricative sound production model for articulatory synthesis)
- 2004-2006** ASP.NET web application development

ASSOCIATIONS

- 2005-2008** Division for the Advancement of Women in Engineering and Geosciences
- 2004-present** Golden Key International Honour Society
- 2003-2008** Association of Professional Engineers and Geoscientists of BC - Student Advantage Program

VOLUNTEER ACTIVITIES

- 2008** Student Leader, Engineering Day for High School Girls hosted by UBC Women in Engineering
- 2007** Co-organizer and Co-initiator, Calliope Conference and Network for linking girls with artists and innovators
- 2004-2008** Technical Support, Transition Program Graduation Ceremonies
- 2004-2007** Event Organizer and Committee Member, UBC Physics Olympics
- 2004-2006** Marker, PIMS Elementary Grades Math Contest