

# Andrew Augie Carbonetto

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## EDUCATION

**University of British Columbia, Vancouver 2005-2008**

Graduate Studies in Computer Science, M.Sc.

Specialization in Data Management and Bioinformatics

Thesis Title: Ontology Alignment in the Presence of a Domain Ontology

Under Dr Rachel Pottinger and Francis Ouellette. Joint project between the Computer Science Department and UBC Bioinformatics Center.

Course GPA: 3.7/4.0 (83%)

**McGill Center for Bioinformatics, Montreal 2005**

Honors project under Dr. M. Blanchette.

Project Title: Sequence simulation from ancestral genomes (ROSE).

**McGill University, Montreal 2001-2005**

B. Sc. (with Distinction). Major in Computer Science, Minor in Mathematics.

Course GPA: 3.4/4.0

## WORK EXPERIENCE

**Conference Talk: CINVESTAV (Puebla, Mexico) 2008**

Title: Ontology Alignment in the Presence of a Domain Ontology

MSc Thesis work presented to interested crowd in Mexico.

**Poster: Michael Smith Student Poster Presentations on Bioinformatics 2007**

Title: Finding Similar Protein Function using GeneOntology

Work based on thesis topic applied to protein function homology. Developed a system that aligns protein networks across different species. Used the GO for better accuracy of results. Built a novel system for describing function of proteins.

TA at UBC's department of Computer Science. Duties included lecture, tutorials, lab management, assignment marking and management, project marking and management, course scheduling.

**Teaching Assistant: CPSC 445: Algorithms in Bioinformatics 2008**

Sole TA required extra time management and duties. Lectured.

**Teaching Assistant: CPSC 101: Introduction to Computer Science 2007**

Lectured. Course not intended for computer scientists.

**Teaching Assistant: CPSC 411: Compiler Design 2006**

Project produced compiler for Aspect-Oriented Programming Design.

**Teaching Assistant: CPSC 121: Discrete Mathematics 2005**

First year course. Duties included lab management and marking.

**Poster: Canadian Genetic Disease Conference, St. Sauveur 2007**

Title: Finding Similar Protein Function using GeneOntology

**McGill Center for Bioinformatics, McGill University, Montreal 2005**

Honors project and summer internship under Dr. M. Blanchette. Project was tandem repeats finding and analysis in human-chimpanzee-macaque alignments. This included evolutionary model prediction. Produced project ROSE version 2.0 and data analysis of potential tandem repeats.

**McGill University Health Center, Montreal General Hospital, Montreal 2004**

Summer project at the neurobiology lab under Dr. G. Rouleau. Project was gene regulation analysis, and transcription factor binding site prediction/clustering. Duties also included: Computer technician.

**SAGAS Writing Interactive Fiction, Bavarian Filmpfad, Munich, Germany 2003**

Summer internship with IAESTE (international association for the exchange of students for a technical experience). Database administrator. Computer technician. SAGAS: Independent media program for the European Union.

## **SOFTWARE DEVELOPMENT**

Harmony (Ontology merging and alignment), major modification of to work on Ontology

Added functionality for aligning ontologies, rather than simple schemas

Added visualization to evaluate confidence scores

Requirements: Perl, Java, JDBC, OWL (ontology management), RDF/XML, data analysis

TFBS Viewer (Motif Discovery by Eye using multiple alignments)

Transcription Factor Binding Site visualization of DNA sequences in a pairwise or multiple sequence manner.

Requirements: Java, Prefuse Information Visualization Library

ROSE (DNA sequence prediction from ancestral genome), version 2.0

Simulation of Ancestral Sequences. Simulated evolution rates based on empirical observation.

Requirements: C, Lex, Bison

## **AWARDS**

**UBC Student Leadership Award - 2007**

For outstanding duties in the department of computer science at UBC.

**Computer Science Graduate Student Association Vice-President (Financial) 2006-2007**

Other duties included: graduate affairs representative, space and safety representative, database social coordinator.

**Computer Taskforce Systems Administrator, McGill University 2002-2005**

Faculty of Science computer facilities; duties included management of resources, computer services, administration and helpdesk. Student Society of McGill University Best Club Award, 2004.

**IAESTE international internship to Germany 2003**

## **SKILLS**

Database Management: (SQL, RDF, XML)

Programming Languages (Java, C, C++, Perl, Python, Javascript, Aspect-Oriented Java)

Compiler Languages (Lex, Bison, SableCC)

Website administration

Systems administration (Linux, Mac and Windows Server)

Hardware maintenance

Leadership: Team Captain for Soccer and Ultimate Frisbee.