jacobdenson

Computing Scientist and Mathematician

Contact Information

Additional Contact Info Redacted For Web Version
denson@ualberta.ca

Websites

Github Profile: jdjake

Stack Overflow Profile: jacob-denson

Languages

English, Basic German, Python, Perl, C++, C, C#, Matlab, HTML, Javascript, Latex (This resume is proof!)

Mathematics

Linear/Abstract Algebra, Real & Complex Analysis, Measure Theory, Functional Analysis, Topology, Smooth Manifolds, Mathematical Logic, Elementary Differential Equations, Stochastic Processes & Brownian Motion, Category Theory

Interests

Computer Vision and Computational Geometry, Dynamical Systems and Ergodic Theory.

Summary

My adept knowledge of computing science and mathematics have been a solid aid to many groups. With my work on data-consolidation, Microsoft has cut partner pickup times by 80%, saving money for the company and making the partner relationship more pleasant. My work on Cognate identification was crucial to the regeneration process of the near-extinct Totonac languages. My technical competency, enhanced by my strong experience in competitive programming, will add crucial knowledge and experience to your team.

Experience

Summer Internships

2015 **MICROSOFT** Redmond, Washington
Universal Store Data Cleansing
Developed algorithms for data linkage. Utilizing various data-cleansing methods together with the Azure and Bing data-analysis packages, cleansed Microsoft's business partner database, removing redundant info, reducing database entries by 20%. My manager for this project was Aman Kansal (Kansal@microsoft.com). I also worked off-hours with a group of interns to send robot adventurers around the world (http://www.projectatlas.ms/), and organized weekly talk sessions!

2014 **UNIVERSITY OF ALBERTA** Edmonton, Alberta
Natural Language Processing and Cognate Identification
Worked with the NLP group at the University of Alberta to develop cognate recognition algorithms. Successfully pushed to create a centralized database for storing cognate information, simplifying the learning process. This program was successfully used by linguists at the University of Alberta to understand the Totonac language group. Garrett Nicolai supervised the project (Nicolai@ualberta.ca).

2013 **UNIVERSITY OF ALBERTA** Edmonton, Alberta
Reinforcement Learning GAMES group
Implemented efficient abstraction algorithms to create a Sokoban solver for the RLAI group at the University of Alberta, under mentor Harm Van Seijen (Harm.Van.Seijen@gmail.com).

Additional Work & Experience

2015 **UNIVERSITY OF ALBERTA** Edmonton, Alberta
'Tangible Introduction To Computing Science' Teaching Assistant
Advised students in the honours stream of Computing Science who were taking CMPUT 275, a class which introduced students to basic algorithmics, such as asymptotic analysis, divide and conquer, dynamic programming, and such. Led office hours weekly and marked assignments.

2013-Now **Competitive Programming club**
Competitor
Strong Competitor in Competitive Programming. Won the Microsoft 2014 Coding for Cash competition, placed 4th in the Alberta Collegiate programming contest in 2014 and 2015. Coached by Zachary Friggstadt (zacharyf@ualberta.ca), ACM world finalist.

Education

2013-2017 **Bachelors** in Computing Science The University of Alberta

2011-2013 **International Baccalaureate** High School Diploma Harry Ainlay High School

Talks

2016 **CUMC Undergraduate Conference** University of Victoria, Vancouver Island
'On Molecular Gases and the Natural Numbers', a quick, twenty-minute talk introduce the subject of Ergodic theory to undergraduate students, and emphasizing its relation to a variety of problems in mathematics, emphasizing number theory.

2015 **Microsoft Intern Talks** Microsoft Campus, Redmond
Presented my talk on category theory, shortened to a 20 minutes talk, and edited to reduce mathematical prerequisites and to emphasize the practical uses for the average programmer. Organized talks over my internship to enable interns to share their knowledge with the group.

2015 **Honours Computing Science Seminar** University of Alberta
'Category Theory and its relation to Computing Science', an hour-long talk introducing the subject to Honours computing scientists and emphasizing its relation to the Curry Howard isomorphism.

2014 **NLP Research Group** University of Alberta
'Cognates for Reconstruction of Native American Language groups', a twenty minute talk emphasizing my work over the summer and explaining the organization method and SVM classification method for identifying cognates.

2013 **RLAI Tea Time Talks** University of Alberta
'Room Abstraction in Sokoban', a 15 minute talk introducing the game of Sokoban, its combinatorial issues, and room abstraction as an aid to attacking the game.