

Ronald Vance Bjarnason Jr.

2048 KEC, Oregon State University • Corvallis, OR 97331-5501 • 209-648-8979 • ronny@eecs.oregonstate.edu

EDUCATION

Ph.D., Computer Science summer 2009 (expected)
Oregon State University Corvallis, OR
Graduate Research: Applied Artificial Intelligence and Machine Learning

M.S., Computer Science December 2002
Brigham Young University Provo, UT
Thesis: *Learning True Best Response: An Algorithm for Discovering Hidden State in Markov Games*

B.S., Computer Science August 2000
Brigham Young University Provo, UT

PUBLICATIONS

- R. Bjarnason, A. Fern and P. Tadepalli. Lower Bounding Klondike Solitaire with Monte Carlo Planning. *ICAPS 2009* (under review)
- R. Bjarnason, P. Tadepalli, A. Fern and C. Niedner. Simulation-based Optimization of Resource Placement and Emergency Response. *IAAI 2009* (to appear)
- R. Bjarnason, P. Tadepalli and A. Fern, Solving Solitaire in Real Time, *ICGA Journal, Vol.30, No.3*, pp 131-142. Sept 2007. IKAT, Maastricht, The Netherlands.
- R. Bjarnason and T. Peterson, Multi-agent Learning via Implicit Opponent Modeling, *CEC 2002*, IEEE Press, Piscataway, NJ.

EXPERIENCE

Oregon State University, Corvallis, OR

Research Assistant October 2003 - present
Worked with local fire department to improve emergency/fire response policies using various machine learning techniques. Invented multi-stage nested rollout search, used to show that 82% of Klondike games are winnable. Adapted learning techniques for multi-stage heuristics.
Research Areas: Reinforcement Learning, Heuristic Search, Simulation-Based Optimization, Planning, Relational Learning, Feature Induction, Inductive Learning

Instructor: CS325 Analysis of Algorithms Summer 2007, 2008
Designed and presented lectures, homework, and exams on fundamental algorithms and their application. Graded homework (1-2 per week) and exams. Held office hours. Assigned grades.
Anonymous Student Feedback: "Seriously the Best C.S. Instructor I've ever had. He is the first who actually cares whether we are learning or not."(2007) – "Excellent professor. Very clear on what he expects from students."(2007) – "Strong all around. Most likely the best instructor I've ever had."(2008) – "For what it's worth, you're one of the most competent, reliable, and fair teachers I've had. It was a pleasure taking your class."(2008)

Brigham Young University, Provo, UT

Research Assistant June 2001 - September 2002
Created an RL optimal-response agent for stationary opponents in two-player Markov games.
Research Areas: Reinforcement Learning, Multi-Agent Learning, Game Theory

INDUSTRY INTERNSHIPS

Office of Naval Research, San Diego, CA Summer 2003
NREIP. Space and Naval Warfare Systems Center. Designed complex neural nets for meta-learning on simple games (LISP) (Mentor: Stuart Rubin, Ph.D.)

IBM, Provo, UT 1999-2002
Software Engineer: Improved algorithms and interface of voice recognition research prototype for mass distribution. (C++). Developed web-based K-12 educational software. (Macromedia).

SERVICE

Student Representative to Faculty Graduate Committee 2008-present
School of Electrical Engineering and Computer Science, Oregon State University Corvallis, OR
Reviewed graduate student requirements. Recommended amendments to Qualifier and Preliminary Exams to more accurately reflect Department goals.

President, Upsilon Pi Epsilon 2004-present
Oregon State University Corvallis, OR
Honors Society for the Computing Sciences, Oregon State University. Organized regular meetings. Met with Dean of College of Engineering quarterly to discuss student issues. Organized student run EECS graduation ceremony (100+ students, 700+ guests)

President, OSU EECS Graduate Student Association 2005-2006
School of Electrical Engineering and Computer Science, Oregon State University Corvallis, OR
School of Electrical Engineering and Computer Science. Taught graduate student orientation course (Fall 2005). Organized social activities for graduate students and their families. Counseled with administration on graduate student issues.

Reviewer/Referee *ICML 2009, CG 2008*

SKILLS

Artificial Intelligence and Machine Learning: Graduate research in simulation-based optimization and heuristic search especially learning heuristics for multi-stage search in game trees.
Other Topics: Reinforcement Learning (Relational RL, Value Function RL, Policy Search in RL), Heuristic Search, Planning, Game Trees, Feature Discovery and Induction, Multiagent Interaction
Programming: C++ over ssh using vi, Lisp, Python, Java, bash shell scripting, awk, sed
Other: St. George, UT Marathon finisher, 1998 (3:41:06), 1999 (3:18:15). Newport, OR Marathon finisher, 2006 (3:33:43), 2008 (3:12:07)

INDEPENDENT PROGRAMMING

- C++ Wrote simulation of local responses to actual *911* calls from Corvallis, OR. Used machine learning techniques to adjust response methods and improve performance
- *OpenGL*, C++ Created version of Klondike Solitaire with open-faced deck. Used advanced heuristic search techniques to recommend actions for users.
- *LISP* Wrote multi-layer neural-network for learning to play tic-tac-toe.
- C++ Wrote Sudoku solver based on basic logic rules (no backtracking) as proof of concept for 2 professors, who were convinced backtracking was required for most instances.

REFERENCES

Dr. Prasad Tadepalli
3069 Kelley Engineering Center
Oregon State University
Corvallis, OR 97331
(541) 737-5552
tadepall@eeecs.oregonstate.edu

Carl Niedner
Coelo Company of Design
P O Box 2292
Corvallis, OR 97339
(541) 754-1589
cdn@coelo.com

Dr. Alan Fern
2061 Kelley Engineering Center
Oregon State University
Corvallis, OR 97331
(541) 737-9202
afern@eeecs.oregonstate.edu