John Langford

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Qualifications

Education	• B.S. - Computer Science, California Institute of Technology, June 1997. • B.S. - Physics, California Institute of Technology, June 1997. • M.S. - Computer Science, Carnegie Mellon, June 2000.
Skills	• Algorithm development and analyses specializing in probabilistic algorithms and machine learning.
Languages	• C, C++, Java, HTML, SML, Ocaml, Perl, Shell scripting
Algorithms	• Machine learning including Neural Nets, Bayes Nets, Decision Trees, Hidden Markov Models and Support Vector Machines.
Citizenship	• Born in U.S.
Professional Organizations	• Member AAAI.

My interests include:

Playing games
- Role playing games
- battletech
- strategy games
- computer games of the above flavor
- Dissecting and understanding any of the above

camping and hiking
- I enjoy running around in the woods.

learning
- machine learning, machine planning, and related subjects.

Soccer and Fencing.

Work in progress

1. An ICML paper on an average-of-classifiers PAC bound.
2. Analysis of cross-validation bounds in the PAC paradigm.
3. Maximizing the quantitative tightness of PAC bound applications to real world algorithms.

Refereed Publications

1. Josh Tenenbaum, Vin de Silva and John Langford. A Global Geometric Framework for Nonlinear Dimensionality Reduction . Science Magazine vol290 issue5500 isomap site
2. Joseph O'Sullivan, John Langford, Rich Caruana and Avrim Blum. FeatureBoost: A Meta-Learning Algorithm that Improves Model Robustness. ICML2000
3. John Langford and David McAllester. Computable Shell Decomposition Bounds. COLT2000
4. John Langford and Avrim Blum 1999. Microchoice Bounds and Self Bounding learning algorithms. COLT99
5. Avrim Blum, Adam Kalai, and John Langford 1999. Beating the Holdout: Bounds for KFold and Progressive Cross-Validation. COLT99
6. S. Thrun, John Langford, and Dieter Fox 1999. Monte Carlo Hidden Markov Models: Learning Non-Parametric Models of Partially Observable Stochastic Proecesses. ICML99
7. Avrim Blum, Carl Burch, and John Langford, 1998. On Learning Monotone Boolean Functions Proceedings of the 39th Annual Symposium on Foundations of Computer Science FOCS '98.
8. Avrim Blum and John Langford Probabilistic Planning in the Graphplan Framework. ECP, 1999.

Employment History

Carnegie Mellon, Pittsburgh, PA September 1997 - present

Graduate student working on PhD in machine learning theory.

- Principally, I work in improving bounds on the generalization of machine learning algorithms but any interesection of statistics, algorithms, and computers is fair game.

IBM, Almaden, CA Summer 2000

Summer research with Shiv Vaithyanathan and Nimrod Megiddo

- Hidden markov models for parsing and PAC Averaging bounds.

California Institute of Technology, Pasadena, CA, summer 1997

Researcher for Shuki Bruck and Yaser Abu-Mustafa

- Researched the Support Vector machine algorithm and the application of learning bounds to it.

California Institute of Technology, Pasadena, CA, summer 1996

Researcher supported by SURF

- Developed a Monte Carlo generator for theorized Heavy Majorana Neutrinos in an e+e- collider.

California Institute of Technology, Pasadena, CA, summer 1995

Researcher for Mani Chandy

- Developed a Games Archetype which can be used with a board evaluation function to create 2 player perfect information games quickly.

California Institute of Technology, Pasadena, CA, summer 1994

Researcher supported by SURF

- Implemented a new version of the Parti-game algorithm by Andrew Moore and explored its use.

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