Curriculum Vitae

Michael S. Gashler

Research Scientist Specializing in Machine Learning
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Statement of Intent:

My primary research interest is the field of machine learning. In particular, I am interested in automated systems that can learn to make sense from visual images. My work to date has involved using non-linear dimensionality reduction techniques to estimate intrinsic state from collections of images. I am especially interested in neural-based techniques, and in using estimated state to train recurrent networks. My work is centered in the proximity of non-linear dimensionality reduction, neural networks, time-series prediction, black-box system identification, and computer vision. I will complete my Ph.D. from Brigham Young University in April, 2012. At that time, I would like to begin a research position that will allow me to pursue publications in top machine learning conferences and journals. I would consider the opportunity to teach to be a bonus.

Publications:

Gashler, Michael S. and Martinez, Tony. Temporal nonlinear dimensionality reduction. In Proceedings of the IEEE International Joint Conference on Neural Networks IJCNN'11, pages 1959–1966. IEEE Press, 2011.

Gashler, Michael S. *Waffles*: A machine learning toolkit. Journal of Machine Learning Research, MLOSS 12:2383–2387, July 2011. ISSN 1532–4435. http://www.jmlr.org/papers/volume12/gashler11a/gashler11a.pdf

Gashler, Michael S. and Ventura, Dan and Martinez, Tony. Manifold Learning by graduated optimization. IEEE Transactions on Systems, Man, and Cybernetics, Part B, PP(99):1–13, 2011. ISSN 1083–4419. DOI: 10.1109/TSMCB.2011.2151187.

Gashler, Michael S. and Martinez, Tony. Tangent space guided intelligent neighbor finding. In Proceedings of the IEEE International Joint Conference on Neural Networks IJCNN'11, pages 2617–2624. IEEE Press, 2011.

Gashler, Michael S. and Giraud-Carrier, Christophe and Martinez, Tony. Decision Tree Ensemble: Small Heterogeneous Is Better Than Large Homogeneous. In The *Seventh International Conference on Machine Learning and Applications*, Pages 900–905, ICMLA '08. 2008. DOI 10.1109/ICMLA.2008.154

Gashler, Michael S. and Ventura, Dan and Martinez, Tony. Iterative non-linear dimensionality reduction with manifold sculpting. In Platt, J.C. and Koller, D. and Singer, Y. and Roweis, S., editor, *Advances in Neural Information Processing Systems 20*, pages 513–520, MIT Press, Cambridge, MA, 2008.

In Review:

Gashler, Michael S. and Martinez, Tony. Robust Manifold Learning With CycleCut. In review at Connection Science, 2012.

Education

Ph.D. in Computer Science, (pending) 2012, Brigham Young University
M.S. in Computer Science, 2007, Brigham Young University
B.S. in Computer Science, 2001, Brigham Young University

Employment History

Neural Networks and Machine Learning Lab	Research assistant for Tony Martinez in machine learning at Brigham Young University.	May 2006 – Present
Edumetrics Institute	Worked as a development lead and engineer to build an interpreter training program and a decentralized multi-player Internet game.	Dec 2004 – May 2006
Microsoft	Worked for Microsoft on the Common Language Runtime (the .NET virtual machine.) I developed Code Access Security, the PE file Verifier, and co-invented patents #7647629 and #7743423.	Jul 2001 – Nov 2004
Vision Lab	Did Image processing research for Bill Barrett. I worked on finding object boundaries by matching similar parts of successive animation frames.	Jan 2001 – Jun 2001
Microsoft	Internship for Microsoft. I did performance work on the startup time of Visual Studio 7.0.	May 2000 – Jul 2000
Incline Software	Worked for Incline Software on Ancestral Quest (which later became PAF).	Apr 1998 – Sep 1999
Waterford Institute	Developed educational software for children.	Jan 1998 – Apr 1998
Scott+Charles Computer	Wrote a Windows version of GlassMaster (software for running a glass shop) for Scott+Charles Computer.	May 1994 – Aug 1994

References

Tony Martinez, Ph.D., Professor of Computer Science, Brigham Young University
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Dan Ventura, Ph.D., Associate Professor of Computer Science, Brigham Young University
https://cs.byu.edu/faculty/ventura_dan
ventura@cs.byu.edu

Christophe Giraud-Carrier, Ph.D., Associate Professor of Computer Science, Brigham Young University
https://cs.byu.edu/faculty/giraudcarrier_christophe
cgc@cs.byu.edu

Hobby Projects

For an informal overview of my hobby projects and contributions to open source, please visit http://gashler.com/mike.