MATTHEW MULLIN

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Research Interests

Algorithms, Machine Learning, Computer Vision

Employment

Georgia Institue of Technology 2002–present
Research Scientist I
Research in computer vision and machine learning.

Whizbang! Labs 2000–2002
Distinguished Engineer
Implemented machine learning algorithms for commercial text classification and extraction.

Just Research (Justsystem Pittsburgh Research Center) 1998–2000
Research Programmer
Collaborated on projects in computer vision and machine learning resulting in publications and patents.

Educational Background

Princeton University, Princeton, New Jersey 1986–1990
Bachelor of Arts Degree with Honors in Mathematics

Journal Publications

S.C. Brubaker, J. Wu, J. Sun, M.D. Mullin, and J.M. Rehg. On the design of cascades of boosted ensembles for face detection. *International Journal of Computer Vision*, 77(1–3):65–86, May 2008. DOI: 10.1007/s11263-007-0060-1.

J. Wu, S.C. Brubaker, M.D. Mullin, and J.M. Rehg. Fast asymmetric learning for cascade face detection. *IEEE Transactions on Pattern Recognition and Machine Intelligence*, 30(3):369–382, 2008. DOI: 10.1109/TPAMI.2007.1181.

Z. Hussain, F. Laviolette, M. Marchand, J. Shawe-Taylor, S.C. Brubaker, and M.D. Mullin. Loss bounds for the set covering machine and sample-compression loss bounds for imbalanced data. *Journal of Machine Learning Research*, 8:2533–2549, 2007.

J. Gallian and M. Mullin. Groups with anti-symmetric mappings. *Archiv der Mathematik*, 65(4):273–280, 1995. DOI: 10.1007/BF01195537.

Conference Publications

S.C. Brubaker, J. Wu, J. Sun, M.D. Mullin, and J.M. Rehg. Towards optimal training of cascade classifiers. In *Toward Category-Level Object Recognition*, volume 4170 of *Lecture Notes in Computer Science*, pages 310–320. 2006. DOI: 10.1007/11957959-16.

S.C. Brubaker, M.D. Mullin, and J.M. Rehg. Towards optimal training of cascade classifiers. In *Proceedings of the European Conference on Computer Vision*, 2006.

J. Wu, M.D. Mullin, and J.M. Rehg. Linear asymmetric classifier for face detection. In *Proceedings of the International Conference on Machine Learning*, 2005.

J. Wu, J.M. Rehg, and M.D. Mullin. Learning a rare event detection cascade by direct feature selection. In *Proceedings of Neural Information Processing Systems*, 2003.

J. Wu, J.M. Rehg, and M.D. Mullin. Learning a rare event detection cascade by direct feature selection. In *Workshop on Statistical and Computational Theories of Vision*, 2003.

R. Sukthankar, R.G. Stockton, and M.D. Mullin. Smarter presentations: Exploiting homography in camera-projector systems. In *Proceedings of International Conference on Computer Vision*, 2001.

R. Sukthankar, R.G. Stockton, and M.D. Mullin. Self-calibrating camera-assisted presentation interface. In *Proceedings of International Conference on Control, Automation, Robotics and Computer Vision*, 2000.

R. Sukthankar, R.G. Stockton, and Mullin M.D. Automatic keystone correction for camera-assisted presentation interfaces. In *Proceedings of International Conference on Mulitmedia Interfaces*, 2000.

M. Mullin and R. Sukthankar. Complete cross-validation for nearest neighbor classifiers. In *Proceedings of International Conference on Machine Learning*, 2000.

T. Sim, R. Sukthankar, M. Mullin, and S. Baluja. Memory-based face recognition for visitor identification. In *Proceedings of IEEE Face and Gesture*, 2000.

R. Caruana and M. Mullin. Estimating the number of local minima in big, nasty search spaces. In *IJCAI99 Workshop on Statistical Machine Learning for Large-Scale Optimization*, 1999.

Technical Reports

J. Wu, J.M. Rehg, and M.D. Mullin. Learning a rare event detection cascade by direct feature selection. Technical report, Georgia Institute of Technology, 2003.

T. Sim, R. Sukthankar, M.D. Mullin, and S. Baluja. High-performance memory-based face recognition for visitor identification. Technical report, Just Research, 1999.

M. Mullin and R. Sukthankar. An efficient technique for calculating exact nearest-neighbor classification accuracy. Technical report, Just Research, 1999.

Patents

R. Sukthankar, R. Stockton, and M. Mullin. Method and apparatus for automatic keystone correction. U.S. Patent 6,753,907, June 22, 2004.

R. Sukthankar, R. Caruana, M. Mullin, and K. Kasegawa. Method and apparatus for using illumination from a display for computer vision based user interfaces and biometric authentication. U.S. Patent 6,704,447, March 9, 2004.

R. Sukthankar, R. Stockton, and M. Mullin. Method and apparatus for calibrating projector-camera system. U.S. Patent 6,618,076, September 9, 2003.

Professional Activities

Member of Association for Computing Machinery

Member of the Mathematical Association of America