Bruce A. Draper
draper@cs.colostate.edu

Professional Experience

2001 – date. *Associate Professor, Department of Computer Science, Colorado State University*
2006 (Jan through July) *Visiting Scholar, Department of Psychology, Harvard University*
1996 – 2001. *Assistant Professor, Department of Computer Science, Colorado State University*
1993 – 1996. *Senior Post-doctoral Research Scientist, Department of Computer Science, University of Massachusetts (Amherst)*

Education

Ph.D., Computer Science, University of Massachusetts (Amherst), 1993.
M.S., Computer Science, University of Massachusetts (Amherst), 1987.
B.S., Computer Science, Yale University, 1984.

Journal Articles (Academic)

1. *J. Beveridge, G. Givens, J. Phillips, B. Draper, D. Bolme and Y.M. Lui, "FRVT 2006: Quo Vadis Image Quality", Image and Vision Computing, 28(5):732-743, May 2010.*
2. *J. Beveridge, B. Draper, J-M Chang, M. Kirby, H. Kley, C. Peterson. "Principal Angles Separate Subject Illumination Spaces in YDB and CMU-PIE", IEEE Transactions on Pattern Analysis and Machine Intelligence, 31(2):351-356, 2009*
3. *J. Ross Beveridge, Geof H. Givens, P. Jonathon Phillips, Bruce A Draper, "Factors that Influence Algorithm Performance in the Face Recognition Grand Challenge", Computer Vision and Image Understanding, 113(6):750-762, June 2009.*
4. *Beveridge, J.R., G. Givens, J. Phillips and B. Draper.," Factors that Influence Algorithm Performance in the Face Recognition Grand Challenge", Computer Vision and Image Understanding 113(6):351-363, 2009.*
5. *K. Saitwal, A. Maciejewski, B. Roberts and B. Draper. "Using the Low Resolution Properties of Correlated Images to Improve the Computational Efficiency of Eigenspace Decomposition," IEEE Transactions on Image Processing, 15(8):2376-87, 2006.*
6. *B. Draper and A. Lionelle. "Evaluation of Selective Attention under Similarity Transformations," Vision and Image Understanding, 100:152-171, 2005.*
7. *B. Draper, D. Elliott, J. Hayes and K. Baek. "EM in High Dimensional Spaces", IEEE Transactions on Systems, Man and Cybernetics, 35(3):571-577, 2005.*
8. *D. Bolme, R. Beveridge, M. Teixeira and B. Draper. "The CSU Face Identification Evaluation System: Its Purpose, Features and Structure," Machine Vision and Applications, 16(2):128-138, 2005 .*
9. *B. Draper, K. Baek and J. Boody. "Implementing the Expert Object Recognition Pathway," Machine Vision and Applications, 16(1):27-32, 2004.*
10. *B. Draper, K. Baek, M.S. Bartlett and R. Beveridge. "Recognizing Faces with PCA and ICA", Computer Vision and Image Understanding, 91:115-137, 2003.*
11. *B. Draper, R. Beveridge, W. Böhm, C. Ross and M. Chawathe. "Accelerated Image Processing on FPGA's", IEEE Transactions on Image Processing, 12(12):1543-1551, 2003.*
12. *W. Najjar, W. Böhm, B. Draper, J. Hammes, R. Rinker, R. Beveridge, M. Chawathe, and C. Ross. "From Algorithms to Hardware – A High-Level Language Abstraction for Reconfigurable Computing," IEEE Computer, 36(8):63-69, 2003.*
13. *S. Buluswar and B. Draper. "Estimating Apparent Color in Outdoor Images", Computer Vision and Image Understanding, 85(2):71-99, 2002.*

14. W. Böhm, J. Hammes, B. Draper, M. Chawathe, C. Ross, R. Rinker, and W. Najjar. "Mapping a Single Assignment Programming Language to Reconfigurable Systems," Supercomputing, 21:117-130, 2002.
15. B. Draper and R. Beveridge. "Teaching Image Computation: From Computer Graphics to Computer Vision," International Journal on Pattern Recognition and Artificial Intelligence, 15(5):823-831, 2001.
16. B. Draper, J. Bins, K. Baek. "ADORE: Adaptive Object Recognition", Videre, 1(4):86-99, 2000.
17. M. Marengoni, B. Draper, A. Hanson, and R. Sitaraman. ``Placing Observers to Cover a Polyhedral Terrain in Polynomial Time", Vision and Image Computing, 18(10):773-780, 2000.
18. S.D. Buluswar and B.A. Draper. "Color Machine Vision for Autonomous Vehicles", International Journal for Engineering Applications of Artificial Intelligence, 11:245-256, 1998.
19. B. Draper, A. Hanson and E. Riseman. "Knowledge-Directed Vision: Control, Learning and Integration," Proceedings of the IEEE, 84(11):1625-1637, 1996.
20. B. Draper, C. Brodley and P. Utgoff. "Goal-directed Classification Using Linear Machine Decision Trees," IEEE Trans. on Pattern Analysis and Machine Intelligence, 16(9):888-89, 1994.
21. B. Draper and R. Beveridge. "Response to `Performance Characterization in Computer Vision,'" Image Understanding, 60(3):262-263.
22. B. Draper, A. Hanson and E. Riseman. "Learning Blackboard-based Scheduling Algorithms for Computer Vision," International Journal of Pattern Recognition and Artificial Intelligence, 7(2):309-328, 1993.
23. B. Draper, R. Collins, J. Brolio, A. Hanson and E. Riseman. "The Schema System," International Journal of Computer Vision, 2:209-250, 1989. Reprinted in Computer Vision: Advances and Applications, R. Kasturi and R. Jain (eds.), IEEE Computer Society Press, Los Alamitos, CA., 1991, pp. 433-471.
24. J. Brolio, B. Draper, R. Beveridge and A. Hanson. "ISR: A Database for Symbolic Processing in Computer Vision," IEEE Computer, 22(12):22-30, 1989.

Journal Articles (Popular)

25. W. Böhm, R. Beveridge, B. Draper, C. Ross, M. Chawathe. "SA-C: Single Assignment C for FPGA Programming", Dr. Dobb's Journal, May, 2003, p. 60-64.

Book Chapters

26. R. Beveridge, B. Draper, G. Givens and W. Fisher. "Introduction to the Statistical Evaluation of Face Recognition Algorithms," in Face Processing, Advanced Modeling and Methods, W. Zhao and R. Chellappa (eds), Elsevier, 2005.
27. W. Yambor, B. Draper and R. Beveridge. "Analyzing PCA-based Face Recognition Algorithms: Eigenvector Selection and Distance Measures," in Empirical Evaluation Methods in Computer Vision, H. Christensen and J. Phillips (eds.), World Scientific Press, Singapore, 2002.
28. R. Beveridge, B. Draper, M. Stevens, A. Hanson and K. Siejko. "A Coregistration Approach to Multisensor Target Recognition with Extensions to Exploit Digital Elevation Map Data," in Reconnaissance, Surveillance, and Target Acquisition for the Unmanned Ground Vehicle, Oscar Firschein (ed.). Morgan Kaufmann, 1997, pp. 231-265.

29. B. Draper. "Learning Control Strategies for Object Recognition," in *Symbolic Visual Learning*, K. Ikeuchi and M. Veloso (eds.), Oxford University Press, New York, 1997, pp. 49-76.

30. B. Draper, A. Hanson and E. Riseman. "Integrating Visual Procedures for Mobile Perception," in *Experimental Environments for Computer Vision and Image Processing*, H.I. Christenson and J.L. Crowley (eds.), World Scientific Press, 1994. pp. 183-193.

31. B. Draper, R. Collins, J. Brolio, A. Hanson and E. Riseman. "Issues in the Development of a Blackboard-based Schema System for Image Understanding," in *Blackboard Systems*, R. Englemore and T. Morgan (eds.), Addison-Wesley, London, 1988. pp. 189-218.

Conference and Refereed Workshop Articles

32. N. Parrish and B. Draper. "Image Feature Associations via Local Semantic Structure", *IEEE International Conference on Pattern Recognition*, Istanbul, 2010.

33. D. Bolme, R. Beveridge, B. Draper, and Y.M. Lui. "Visual Object Tracking using Adaptive Correlation Filters", *IEEE Conference on Computer Vision and Pattern Recognition*, San Francisco, CA, 2010.

34. D. Bolme, Y.M. Lui, B. Draper, R. Beveridge, "Simple Real-Time Human Detection using a Single Correlation Filter", *12th IEEE International Workshop on Performance Evaluation of Tracking and Surveillance*, Salt Lake City, Utah, Dec. 2009.

35. D. Bolme, R. Beveridge and B. Draper. "FaceL: Facile Face Labeling", *International Conference on Vision Systems*, Liege, Belgium, Oct. 2009, p.21- 32.

36. T. Comer and B. Draper. "Interest Point Stability Detection", *International Conference on Vision Systems*, Liege, Belgium, Oct. 2009, p. 315-324

37. Y.M. Lui, D. Bolme, B. Draper, R. Beveridge, G. Givens and J. Phillips. "A Meta-Analysis of Face Recognition Coavariates", *IEEE Workshop on Biometrics Theory, Application, and Systems*, Washington D.C., Sept. 30-Oct. 2, 2009

38. D. Moore, J. Stevens, S. Lundberg and B. Draper. "Top-down Image Segmentation Using Congealing and Graph-cut", *IEEE International Conference on Pattern Recognition*, Tampa, FL, Dec. 8-11, 2008.

39. Y.-M. Liu, R. Beveridge, B. Draper and M. Kirby. "Image-set matching using a geodesic distance and cohort normalization", *IEEE International Conference on Face and Gesture Recognition*, Amsterdam, Sept. 17-19, 2008

40. R. Beveridge, G. Givens, J. Phillips, B. Draper and Y.-M. Liu. "Focus on Quality: Predicting FRVT 2006 Performance," *IEEE International Conference on Face and Gesture Recognition*, Amsterdam, Sept. 17-19, 2008.

41. Bruce A. Draper. "A Biomimetic Architecture", *International Conference on Vision Systems*, Bielefeld, Germany, March 21-24, 2007.

42. J-M Chang, M. Kirby, H. Kley, H. Kley, C. Peterson, B. Draper, and R. Beveridge. "Recognition of digital images of the human face at ultra low resolution via illumination spaces" in *8th Asian Conference on Computer Vision*. 2007. Tokyo: IEEE CS Press.

43. L.J Troup, M.A. Pitts, B.A. Draper and E.K. Catellier. "High Band Pass Filters of Face Images and their Effect on the N170 Event Related Potential" in *Vision Sciences Society*. 2007. Sarasota, FL: Journal of Vision 6(6).

44. J-M Chang, M. Kirby, H. Kley, C. Peterson, R. Beveridge and B. Draper. "Examples of Set-to-set Image Classification," *Seventh International Conference on Mathematics in Signal Processing*, The Royal Agricultural College, Cirencester, England. Dec. 2006, pp. 102-105. (Abstract reviewed)

45. J-M Chang, R. Beveridge, B. Draper, M. Kirby, H. Kley and C. Peterson. "Illumination Face Spaces Are Idiosyncratic," in *Proceedings of the 2006 International Conference on Image*

Processing, Computer Vision, & Pattern Recognition, Las Vegas, Nevada, USA, June 26-29, 2006, Volume 2, pp. 390-396

46. *G. Givens, R. Beveridge, B. Draper and D. Bolme. "Using a Generalized Linear Mixed Model to Study the Configuration Space of a PCA+LDA Human Face Recognition Algorithm," Third International Workshop on Articulated Motion and Deformable Objects, Palma de Mallorca, Spain, Sept. 22-24, 2004. p. 1-11.*

47. *G. Givens, R. Beveridge, B. Draper, P.Grother and J. Phillips. "How Features of the Human Face Affect Recognition: A Statistical Comparison of Three Face Recognition Algorithms," IEEE Conference on Computer Vision and Pattern Recognition, Washington, D.C., June 27-July2, 2004. p. 381-388 (Vol. 2).*

48. *B. Draper, C. Kaito and J. Bins. "Iterative Relief", Workshop on Learning in Computer Vision and Pattern Recognition, Madison, WI, June 22, 2003.*

49. *B. Draper, K. Baek and J. Boody. "Implementing the Expert Object Recognition Pathway," International Conference on Vision Systems, Graz, Austria, April 1-3, 2003. p. 1-11.*

50. *D. Bolme, R. Beveridge, M. Teixeira and B. Draper. "The CSU Face Identification Evaluation System: Its Purpose, Features and Structure," International Conference on Vision Systems, Graz, Austria, April 1-3, 2003. p. 304-313.*

51. *B. Draper and A. Lionelle. "Evaluation of Selective Attention under Similarity Transforms," Workshop on Attention and Performance in Computer Vision, Graz, Austria, April 3, 2003. p. 31-38.*

52. *D. Bolme and B. Draper. "Interpreting LOC Cell Responses," IEEE International Workshop on Biologically Motivated Computer Vision, Tübingen, Germany, Nov. 22-24, 2002, pp. 294-300.*

53. *B. Draper, R. Beveridge, W. Böhm, C. Ross and M. Chawathe. "Implementing Image Applications on FPGAs," International Conference on Pattern Recognition, Quebec City, Aug. 11-15, 2002.*

54. *K. Baek and B. Draper. "Factor Analysis for Background Suppression," International Conference on Pattern Recognition, Quebec City, Aug. 11-15, 2002.*

55. *B. Draper, K. Baek and J. Boody. "A Biologically Plausible Approach to Cat and Dog Discrimination," Joint AIPR International Workshops on Structural, Syntactic and Statistical Pattern Recognition, Windsor, Ont. Aug. 6-9, 2002. p.779-788.*

56. *W. Böhm, R. Beveridge, B. Draper, C. Ross, M. Chawathe and W. Najjar. "Compiling ATR Probing Codes for Execution on FPGA Hardware," IEEE Symposium on Field Programmable Custom Computing Machines, Napa Valley, CA, April 21-24, 2002.*

57. *J. Bins and B. Draper. "Evaluating Feature Relevance: Reducing Bias is Relief," Joint Conference on Information Sciences, Durham, NC, March 8-14, 2002. pp 757-760.*

58. *K. Baek, B. Draper, R. Beveridge, K. She. "PCA vs ICA: A comparison on the FERET data set," Joint Conference on Information Sciences, Durham, NC, March 8-14, 2002. pp. 824-837.*

59. *R. Beveridge, K. She, B. Draper, G. Givens. "A Nonparametric Statistical Comparison of Principal Component and Linear Discriminant Subspaces for Face Recognition," IEEE Conference on Computer Vision and Pattern Recognition, Kauai, HI, Dec. 11-13, 2001. Pp. I:535-542.*

60. *J. Hammes, W. Böhm, C. Ross, M. Chawathe, B. Draper, W. Najjar. "High Performance Image Processing on FPGAs", Los Alamos Computer Science Institute Symposium, Sante Fe, NM, Oct. 15-18, 2001. Proceedings on CD.*

61. *J. Bins and B. Draper. "Feature Selection from Huge Feature Sets", International Conference on Computer Vision, Vancouver, July 9-12, 2001. Vol 2, p. 159-165.*

62. *B. Draper, U. Ahlrichs and D. Paulus. "Adapting Object Recognition Across Domains: A Demonstration," International Conference on Vision Systems, Vancouver, July 7-8, 2001. p. 256-267.*

63. B. Draper, W. Bohm, J. Hammes, W. Najjar, R. Beveridge, C. Ross, M. Chawathe, M. Desai, J. Bins. "Compiling SA-C Programs to FPGAs: Performance Results," International Conference on Vision Systems, Vancouver, July 7-8, 2001. p. 220-235.

64. W. Bohm, B. Draper, W. Najjar, J. Hammes, R. Rinker, M. Chawathe and C. Ross. "One-step Compilation of Image Processing Applications to FPGAs," IEEE Symposium on Field-programmable Custom Computing Machines, Rohnert Park, CA, April 30 - May 2, 2001.

65. J. Hammes, W. Bohm, C. Ross, M. Chawathe, B. Draper, R. Rinker, and W. Najjar. "Loop Fusion and Temporal Common Subexpression Elimination in Window-based Loops," IPDPS 8th Reconfigurable Architectures Workshop, San Francisco, CA, April 27, 2001.

66. M. Stevens, B. Draper & R. Beveridge. "Pose from Color," International Conference on Pattern Recognition, Barcelona, Sept. 3-8, 2000. pp. 236-244.

67. R. Rinker, J. Hammes, W. Najjar, W. Böhm & B. Draper. "Compiling Image Processing Applications to Reconfigurable Hardware," IEEE International Conference on Application-specific Systems, Architectures, and Processors, Boston, July 10-12, 2000. pp. 56-65.

68. W. Yambor, B. Draper & R. Beveridge. "Analysis of PCA-based Face Recognition Algorithms: Eigenvector Selection and Distance Measures," Second Workshop on Empirical Evaluation Methods in Computer Vision, Dublin, July 1, 2000.

69. C. Anderson, B. Draper & D. Peterson, "Behavioral Cloning of Student Pilots with Modular Neural Networks", International Conference on Machine Learning, Stanford, CA, June 29-July 2, 2000. pp. 25-32.

70. L. Forbes & B. Draper. "Inconsistencies in Edge Detector Evaluation," IEEE Conference on Computer Vision and Pattern Recognition, Hilton Head, S.C., June 13-15, 2000. Vol 2, pp. 398-404.

71. B. Draper & K. Baek. "Unsupervised Learning of Biologically Plausible Object Recognition Strategies," IEEE International Workshop on Biologically Motivated Computer Vision, Seoul, May 15-17, 2000, pp. 238-247.

72. J. Hammes, B. Rinker, W. Böhm, W. Najjar, B. Draper, R. Beveridge. "Cameron: High Level Language Compilation for Reconfigurable Systems," Conference on Parallel Architectures and Compilation Techniques, Newport Beach, CA, Oct. 12-16, 1999.

73. B. Draper, J. Bins and K. Baek. "ADORE: Adaptive Object Recognition", International Conference on Vision Systems, Las Palmas de Gran Canaria, Spain, Jan 13-15, 1999, pp. 522-537 @Springer-Verlag

74. J. Hammes, B. Draper and W. Böhm. "Sassy: A Language and Optimizing Compiler for Image Processing on Reconfigurable Computing Systems", International Conference on Vision Systems, Las Palmas de Gran Canaria, Spain, Jan 13-15, 1999, pp. 83-97 @Springer-Verlag

75. B. Draper and K. Baek. "Bagging in Computer Vision", IEEE Conference on Computer Vision and Pattern Recognition, Santa Barbara CA, June 23-25, 1998, pp. 144-149.

76. S. Buluswar and B. Draper. "Color Recognition in Outdoor Images", International Conference on Computer Vision, Bombay, Jan. 4-7, 1998, pp. 171-177.

77. S. Buluswar and B. Draper. "Learning Object Color: ATR in Color Images," 8th British Machine Vision Conference, Colchester, U.K., Sept. 8-11, 1997.

78. M. Das, E. Riseman, and B. Draper. "FOCUS: Searching for Multi-colored Objects in a Diverse Database", IEEE Conference on Computer Vision and Pattern Recognition, San Juan, P.R., June 17-19, 1997, pp. 756-761.

79. M. Marengoni, B. Draper, A. Hanson, and R. Sitaraman. "Placing Observers to Cover a Polyhedral Terrain in Polynomial Time", IEEE Workshop on Applications of Computer Vision, Sarasota, FL, Dec. 2-4, 1996.

80. B. Draper. "Object Recognition as a Markov Decision Process," International Conference on Pattern Recognition, Vienna, Austria, Aug. 25-29, 1996, Vol. IV, pp. 95-99.

81. G. Kutlu, B. Draper, E. Moss and E. Riseman. *"Support Tools for Visual Information Management,"* Fifth Annual Symposium on Document Analysis and Information Retrieval, Las Vegas, NV, April 15-17, 1996.

82. S. Ravela, B. Draper, J. Lim and R. Weiss. *"Adaptive Tracking and Model Registration across Distinct Aspects,"* International Conference on Intelligent Robots and Systems, Pittsburgh, PA, Aug. 1995 Vol 1, pp. 174-180.

83. S. Badal, S. Ravela, B. Draper and A. Hanson. *"A Practical Obstacle Detection and Avoidance System,"* 2nd IEEE Workshop on Applications of Computer Vision, Dec. 5-7, 1994. p. 97-104.

84. B. Draper, G. Kutlu, E. Riseman and A. Hanson. *"ISR3: Communication and Data Storage for an Unmanned Ground Vehicle,"* International Conference on Pattern Recognition, Jerusalem, Oct. 1994. Vol I, pp. 836-838.

85. B. Rochwerger, C. Fennema, B. Draper, A. Hanson and E. Riseman. *"An Architecture for Reactive Behavior,"* International Conference on Pattern Recognition, Jerusalem, Oct. 1994. Vol IV, pp. 304-309.

86. B. Rochwerger, C. Fennema, B. Draper, A. Hanson and E. Riseman. *"Executing Reactive Behavior for Autonomous Navigation,"* IEEE Conference on Computer Vision and Pattern Recognition, Seattle, WA, June 1994, pp. 838-841.

87. B. Draper and A. Hanson. *"An Example of Learning in Knowledge-directed Vision,"* Scandinavian Conference on Image Analysis, Aalborg, DK., August 1991. pp. 189-201.

   Reprinted in Theory and Applications of Image Analysis, P. Johansen and S. Olsen (eds.), World Scientific Publishing Co., Singapore, 1992. pp. 237-252.

88. B. Draper and E. Riseman. "Learning 3D Recognition Strategies," Third International Conference on Computer Vision, Osaka, Japan, Dec. 1990. pp. 320-324.

89. B. Draper, J. Brolio, R. Collins, A. Hanson and E. Riseman. "Image Interpretation by Distributed Cooperative Processes," IEEE Conference on Computer Vision and Pattern Recognition, Ann Arbor, MI, June 1988, pp. 129-135.

Academic (External) Service

Program Committee Chair, 8th International Conference on Vision Systems, to be held in Nice, France, Oct. 2011.

Expert reviewer for European Commission Programs on Cognitive Systems (FP6 & FP7): 2007-2010

External reviewer for the European SCOVIS project (Luxembourg, 2009; Zurich, 2010).

Program Committee member, IEEE International Conference on Computer Vision and Pattern Recognition, San Francisco, June 13-18, 2010.

Steering Committee Member, International Conference on Vision Systems, 2007-2009.

Member, Program Committee, 6th International Conference on Vision Systems, Santorini, Greece, May 12-15, 2008.

Member, Program Committee, 5th International Conference on Vision Systems, Bielefeld, Germany, March 21-24, 2007.

External reviewer for the European VAMPIRE project (Bielefeld, Germany, 2007).

Program Committee Chair, 4th International Conference on Vision Systems, New York, NY, Jan 5-7, 2006.

General Co-chair, 3rd International Workshop on Articulated Motion and Deformable Objects, Palma de Mallorca, Spain, Sept. 22-24, 2004.

Program Co-chair, IEEE Workshop on Learning in Computer Vision and Pattern Recognition, Madison, WI, June 22nd, 2003 (in conjunction with CVPR 2003).

Member, Program Committee, International Conference on Vision Systems, Graz, Austria, April 1-3, 2003.

Area Chair, International Conference on Machine Learning, Sydney, July 8-12, 2002.

Area Chair, International Conference on Machine Learning, Williamstown, MA, June 28-July 1, 2001.

General co-chair, IEEE Conference on Computer Vision and Pattern Recognition, Ft. Collins, CO., June 23-25 1999.

Area Chair, International Conference on Machine Learning, Stanford, CA., June 29-July 2, 2000.

Multiple reviewing activities. In the last year: ECCV (6 reviews), ICPR (8 reviews), CVPR (5 reviews), ICVS (10 reviews)

University (Internal) Service

Chair, Department Graduate Committee, 2008-2010.

Chair, College of Natural Sciences Sabbatical Committee, 2009.

Member, College of Natural Sciences Sabbatical Committee, 2006-2008.

Member, Department Executive Committee, 2006-2007, 2009-2011.

Member, Research Advisory Committee, CSU Center of Information Science and Technology (ISTeC) 2005-2010.

Member, Faculty Council Strategic and Financial Planning Committee, 2003-2006.

Member, University Program Review Committee for (1) Computer Information Systems Department and (2) Finance Department, 2003.

Presenter for Team CSU (Alumni Relations), Menlo Park, CA, Nov. 12 2005.

Member, College of Natural Sciences Discovery Task Force, 2004-2005.

Awards and Honors

2008 Best Paper Award, with Beveridge, Phillips, Givens and Liu, IEEE International Conference on Face and Gesture Recognition, Amsterdam, Sept. 17-19, 2008.

2005 Outstanding Science Mentor Award in the Feld of Computer Science, from Students as Leaders in Science.

2003 Best Scientific Paper Award, with Baek and Boody, International Conference on Vision Systems, Graz, Austria, April 1-3, 2003

Funded Projects (at CSU)

2010-2012	*(PI) Visual Intelligence Through Latent Geometry and Visual Guidance, Defense Advanced Projects Research Agency (DARPA), Mind's Eye program, $627,215. This project includes option years for 2012-2015. Total budget: $1,656,613.*
2010-2012	*(co-PI) Advance Statistical Analysis of Biometric Challenges and Evaluations, Technical Support Working Group of U.S. Army (TSWG), $451,663.*
2008-2010	*(co-PI) Enhanced Biometrics Fusion: Multiple Biometrics Grand Challenge, Technical Support Working Group of U.S. Army, $433,587.*
2007	*(co-PI) Transfer EBGM to 3VR Security, Inc., SVR Security, Inc., $56,104.*

2006-2007   (PI) Computer Simulation Model of a Biological Vision System, Harvard University (subcontract from DARPA), $21,913.
2005-2007   (co-PI) Understanding Image-feature and Decision-procedure Choice for Human Face Detection, National Science Foundation (NSF), $160,000.
2004-2007   Computing Projections of High-dimensional Data using Algebro-geometric Tools, National Science Foundation (NSF), $594,423.
2004-2007   (co-PI) Covariate Analysis of Face Recognition Algorithms, with R. Beveridge, TSWG through U.S. Army, $333,070.
2003-2005   A Three-dimensional in-vivo system for visualizing gene expression, with June Medford (PI) and Ross Beveridge, National Science Foundation (NSF), $99,000.
2001-2003   (PI) Modeling the Ventral Visual Pathway: A Biomimetic Approach to Object Recognition, National Image and Mapping Agency (NIMA), $224,545.
2000-2003   (co-PI) Statistical Inference Methods for Understanding Human Identification Systems, with R. Beveridge, Defense Advanced Research Projects Agency (DARPA), $442,482
1998-2001   Optimized Compilation of Visual Programs for Image Processing on Adaptive Computing Systems with Wim Bohm, Ross Beveridge and Walid Najjar, DARPA/AFOSR, $1,466,700.
1997-1998   (PI) Learning to Populate Geospatial Databases via Markov Decision Processes, DARPA, $171,875.