Adrian G. Barbu

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Department of Statistics
Florida State University
Tallahassee, FL 32306

Professional History

- Professor, Statistics Department, Florida State University 8/2019 – present
- Associate Professor, Statistics Department, Florida State University 8/2013 – 8/2019
- Assistant Professor, Statistics Department, Florida State University 8/2007 – 8/2013
- Project Manager, Siemens Corporate Research, Princeton, NJ 10/2006 – 8/2007
  Led three other people for a total of four projects
- Research Scientist, Siemens Corporate Research, Princeton, NJ 10/2005– 9/2006
- Internship, Siemens Corporate Research, Princeton, NJ 7/2005– 9/2005
- Internship, Microsoft Research, Beijing, China 7/2004– 9/2004
- Research Associate, UCLA, Computer Science, Los Angeles, CA 9/2002– 6/2005
- Research Associate, OSU, Computer Science, Columbus, OH 9/2000– 8/2002
- Teaching Assistant, OSU, Mathematics, Columbus, OH 7/1995– 6/2000
- Research Assistant, Institute of Mathematics, Bucharest, Romania 9/1994– 6/1995

Education

Ph.D. Computer Science, University of California at Los Angeles 6/2005

Advisor: Prof. Song-Chun Zhu, Computer Vision.

Dissertation: Cluster Sampling and its Applications to Segmentation, Stereo and Motion.

Ph.D. Mathematics, Ohio State University 7/2000

Advisor: Prof. Avner Ash, Algebra.

Dissertation: On the cohomology $GL_n(F_p)$, with F_p, coefficients.

B.S. Mathematics, University of Bucharest, Romania 6/1995

Research Interests

1. **Machine learning**
   - Learning sparse models
     - Feature selection and learning for big data
     - Online learning with model selection
     - Matrix completion, missing data
     - Learning feature interactions
   - Semisupervised learning: clustering, multi-view learning
   - Theoretical bounds for learning discriminative and generative models
   - Deep learning
2. **Computer Vision**
   - Generative models
     - Image denoising
   - Object detection, parsing, and segmentation
3. **Medical Image Understanding**
   - Learning-based 3D organ segmentation
   - Integrating detection and segmentation

Honors and Awards

- Finalist, US National Inventor of the Year 2011
- Thomas A. Edison Patent Award 2011
  System and Method for Segmenting Chambers of a Heart in a Three Dimensional Image. Patent No. **7,916,919**
- 2nd Prize, International Mathematics Olympiad, Germany 1989
- 1st Prize, Balkanic Mathematics Olympiad, Cyprus 1988
- Research Assistantships 2000-2005
- Graduate Teaching Award Nomination 1999
- Teaching Assistantships 1995-2000

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Professional Activities

Editorial Activities

- Associate Editor, Journal of Visual Communication and Image Representation, 2017-present
- Guest editor, CVIU Special Issue on Generative Models, 2015

Workshop, Tutorial and Course Organizer

- Generative and Discriminative Learning for Medical Imaging – International Conference on Medical Imaging and Computer Assisted Intervention, 2014
- Discriminative Learning for Medical Imaging – International Conference on Medical Imaging and Computer Assisted Intervention, 2009

Grant Review Panels

- Quantitative Approaches to Biomedical Big Data (QuBBD), National Science Foundation/ National Institutes of Health, 2016
- Computer Vision Panel, National Science Foundation, 2007

Area Chair

- Medical Image Computing and Computed Assisted Interventions (2015)

Journal Reviewer

- **Biomedical Image Analysis and Computational Biology**: IEEE Transactions on Medical Imaging, Medical Image Analysis, PLoS One, International Journal of Computer Assisted Radiology and Surgery, IEEE Journal on Biomedical and Health Informatics, IEEE Transactions on Biomedical Engineering, European Radiology, Computer Methods and Programs in Biomedicine, IEEE Transactions on Information Technology in Biomedicine
- **Computer Vision and Image Processing**: International Journal of Computer Vision, IEEE Transactions on Pattern Analysis and Machine Intelligence, Computer Vision and Image Understanding, Image and Vision Computing, Journal of Mathematical Imaging and Vision, IEEE Transactions on Image Processing, International Journal of

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Computer Applications, IEEE Transactions on Cybernetics, IEEE Transactions on Multimedia, Journal of Visual Communication and Image Representation, IEEE Transactions on Knowledge and Data Engineering, Machine Vision and Applications, IEEE Transactions on System, Man and Cybernetics part B, IEEE Transactions on System, Man and Cybernetics part C,

- **Machine Learning**: Journal of Machine Learning Research, Pattern Recognition Letters, Pattern Recognition, Artificial Intelligence, IEEE Transactions on Knowledge and Data Engineering
- **Statistics**: Journal of the ASA, Journal of Computational and Graphical Statistics, Annals of Statistics, Statistica Sinica, Annals of Applied Statistics, Electronic Journal of Statistics, Journal of the Royal Statistical Society Series A
- **Mathematics**: Applied and Computational Harmonic Analysis

Conference Reviewer

- **Computer Vision and Image Processing**: International Conference on Computer Vision (2007-2019), European Conference on Computer Vision (2008-2020), IEEE Conference on Computer Vision and Pattern Recognition (2006, 2007, 2009-2020), British Machine Vision Conference (2015-2020), Asian Conference on Computer Vision (2007, 2009, 2010, 2012, 2014,2016)
- **Machine Learning**: International Conference on Machine Learning (2006,2013), European Conference on Machine Learning (2006)
- **Biomedical Image Analysis and Computational Biology:** International Conference on Medical Imaging and Computer Assisted Intervention (2011-2017)

Invited Talks

1. Learning Nonlinear Feature Interactions in the Data Starved Regime. 2021 Florida ASA Chapter Meeting, April 2021
2. A Novel Framework for Online Supervised Learning with Feature Selection. 2021 JMM/AMS Meeting, January 2021
3. Online Learning with Model Selection. SRCOS - Southern Regional Council On Statistics, General Butler State Resort Park, KY, 06/04/2019

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4. Online Learning with Model Selection. NC State University, 02/01/2019
5. Artificial Intelligence and the Future of Humanity, CWT Solutions Group Meeting, Miami Beach, FL, February 2016.
6. Face Detection with a 3D Model. UCLA, 06/19/2015
7. Feature Selection with Annealing for Big Data Learning. Johns Hopkins University, 10/28/2014
8. Feature Selection with Annealing for Regression and Classification. Temple University, 10/15/2014
9. Feature Selection with Annealing for Classification and Regression. UCLA, 08/07/2014
10. A. Barbu, N. Lay. Artificial prediction markets for lymph node detection. IEEE Conference on E-Health and Bioengineering, 2013, November 23rd, 2013
11. A. Barbu, Y. She. Feature Selection by Scheduled Elimination. ASA Spring Research Conference, SRC 2013.
12. Feature Selection by Scheduled Elimination. FL-ASA Chapter Meeting, February 9th, 2013
13. Hierarchical Object Parsing from Structured Noisy Point Clouds, ISBA Regional Meeting, January 9th, 2013
14. The Artificial Prediction Market, ICML Workshop on Markets, Mechanisms and Multi-Agent Models, Edinburgh, July 1st, 2012
15. Hierarchical Object Parsing from Noisy Point Clouds, Siemens Corporate Research, August 16th, 2011
16. Artificial Prediction Markets for Classification, Regression and Density Estimation, UCLA, August 11th, 2011
17. Automatic Detection and Segmentation of Lymph Nodes. NIH, December 8th 2010
18. Supervised Aggregation of Classifiers using Artificial Prediction Markets, SRCOS 2010
19. Supervised Aggregation using Artificial Prediction Markets. FSU Department of Education, February 12th, 2010
20. Supervised Aggregation using Artificial Prediction Markets. UCLA, November 10th, 2009

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21. Marginal Space Learning for Fast Object Detection in Medical Imaging. Tutorial on Discriminative Learning Methods in Medical Imaging, MICCAI 2009
22. Training an Active Random Field for Real-Time Image Denoising. Max Plank Institute, Saarbrucken, Germany, July 16th, 2008
23. The Swendsen-Wang Cuts Algorithm with Applications in Computer Vision, Georgia Tech University, June 2008
24. Active Random Fields for Real-Time Image Denoising, Siemens Corporate Research, May 2008
25. Hierarchical Image-Motion Segmentation using Swendsen-Wang Cuts, *Third Cape Cod MCMC Workshop*, Harvard, 2007
26. A General Cluster Sampling Method for Bayesian Inference, *Joint Statistical Meetings*, Minneapolis, 2005
27. Swendsen-Wang for Perceptual Grouping. *Second Cape Cod Workshop on Monte Carlo Methods*, Harvard, 2004

Funding

1. **DARPA W911NF-16-1-0579** "Fundamental Limits of Learning", $144,137, 09/14/2016-12/13/2017. (PI on Subcontract from UCLA)
2. **DARPA N66001-15-C-4035** "Learning Homogeneous Knowledge Representation from Heterogeneous Data for Quantitative and Qualitative Reasoning in Autonomy", $42,000, 06/29/2015- 07/28/2016. (PI on Subcontract from UCLA)
3. **NSF-1416949** "A Novel Platform for Biological Information Integration and Knowledge Discovery", $70,000. 07/01/2014 – 06/30/2015. (Co-PI)
4. **DARPA FA 8650-11-1-7149** "SEE on a Unified Foundation for Representation, Inference and Learning", $257,000. (PI on subcontract from UCLA)
5. **NSF-0915003** "MCS: Research on Detection and Classification of 2D and 3D Shapes in Cluttered Point Clouds", $400,000 (CO-PI)
6. **ONR N00014-09-1-0664** Statistical and Semantic Approaches for Object, Activity and Intent Recognition., $443,000 (CO-PI)
7. **Siemens** "Landmark Detection Using Discriminative Anatomical Network and Active Random Fields., $31,000 (PI)

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8. **ARO** “Cooperative Systems: Task Allocation for Heterogeneous Agent Teams Via Stochastic Clustering Auctions”, $16,000 (Subcontract)
9. **FSU** “Robust Classification Using Marginal Space Fusion”, $16,000 (PI).

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Teaching

- Applied Machine Learning – Spring 08,09,11,13,14,16, Fall 2016-2020
- Statistical Computing with Python – Spring 2019-2020
- Applied Linear Regression – Fall 2007-2013, 2015-2017
- ANOVA and Design of Experiments – Spring 2016-2017
- Introduction to Applied Statistics – Fall 2012
- Medical Image Analysis – Spring 2010, 2012

Academic and Community Service

Advisory board

- Research Computing Center Advisory Panel

University Service

- Senator, Faculty Senate

Community Service

- Judge, Leon County Science Fair, 2012, 2014.

FSU Statistics Department Service:

- Graduate Student Director (2016-)
- Curriculum Committee (2008-2010, 2013-2014)
- Computer systems and acquisitions committee (2011-2013, 2015-)
- Admissions committee (2011-2014)

FSU Thesis Proposal Committee

1.	Kevin Mueller	Scientific Computing	2020
2.	Jiahui Chen	Statistics	2020
3.	Ahana Roy Choudhury	Computer Science	2019
4.	Evarist Ruhazwe	Civil Engineering	2019
5.	Yiran Chen	Mathematics	2018
6.	Pei-Yau Lung	Statistics	2018
7.	Brian Bartoldson	Scientific Computing	2018
8.	Jaqueline Masaki	Civil Engineering	2018
9.	Amirhessam Tahmassebi	Scientific Computing	2018

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10. Douglas Wilson	Materials Science	2016
11. David Lester	Statistics	2016
12. Chaity Banerjee	Computer Science	2016
13. Nigel Nye	Computer Science	2016
14. Alada Kartheek	Electrical Engineering	2015
15. Kevin Ryan	Chemistry	2015
16. Esra Kocyigit	Education	2015
17. Ruite Guo	Statistics	2015
18. Kaixian Yu	Statistics	2015
19. He Jiang	Statistics	2014
20. Tiffany Schleeter	Statistics	2014
21. Oliver Galvis	Statistics	2013
22. Mingfei Qiu	Statistics	2013
23. Fatih Orcan	Education	2013
24. Darin Dutch	Economics	2012
25. Sebastian Kurtek	Statistics	2011
26. Jennifer Geis	Statistics	2011
27. Paul Hill	Statistics	2011
28. Daniel Osborne	Statistics	2011
29. Wei Liu	Statistics	2010
30. Jordan Cuevas	Statistics	2010
31. Sharon Koon	Education	2009
32. Kai Zhang	Electrical Engineering	2008

FSU Thesis Committee

1. Brian Bartoldson	Scientific Computing	2020
2. Zhiqiu Li	Mathematics	2020
3. Evarist Ruhazwe	Civil Engineering	2020
4. Pei-Yau Lung	Statistics	2019
5. Kevin Ryan	Chemistry	2018
6. Chaity Bannerjee	Computer Science	2017
7. Douglas Wilson	Materials Science	2017

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8. David Lester	Statistics	2017
9. Kaixian Yu	Statistics	2016
10. He Jiang	Statistics	2015
11. Mingfei Qiu	Statistics	2015
12. Alada Kartheek, MSc	Electrical Engineering	2015
13. Oliver Galvis	Statistics	2014
14. Darin Dutch	Economics	2014
15. Fatih Orcan	Education	2013
16. Jennifer Geis	Statistics	2012
17. Jordan Cuevas	Statistics	2012
18. Daniel Osborne	Statistics	2012
19. Paul Hill	Statistics	2012
20. Wei Liu	Statistics	2011
21. Sharon Koon	Education	2010
22. Kai Zhang	Electrical Engineering	2010

International PhD Thesis Committee:

1. Haithem Boussaid	Ecole Centrale Paris, France	2015
2. Franciscu Hettige Anne Mindika Premachandra	Australian National University, Canberra, Australia	2014
3. Johannes Feulner	Friedrich-Alexander University, Erlangen, Germany	2012

Student Advising

Current PhD Students

1. Rashad Aziz, Department of Statistics, FSU
2. Ke Han, Department of Statistics, FSU
3. Rittwika Kansabanik, Department of Statistics, FSU
4. Cheng Long, Department of Statistics, FSU
5. Hongyu Mou, Department of Statistics, FSU
6. Boshi Wang, Department of Statistics, FSU
7. Yijia Zhou, Department of Mathematics, FSU

Past PhD Students

1. Sida Liu, *"Efficient Methods for Unsupervised Learning*". PhD in Statistics, 2021. Machine Learning Engineer, Citibank, FL.
2. Mingyuan Wang, *"Online and Offline Feature Screening and Applications"*. PhD in Statistics, 2021. Data Scientist, Corning Corporation, NY
3. Hua Huang, *"Robust Machine Learning and the Application to Lane Change Decision Making Prediction"*. PhD in Applied Mathematics, 2021. Data Scientist, Twitter Corporation
4. Orhan Akal, "*Deep Learning based generalization of Chan-Vese Level Sets Segmentation*", 2020. Machine Learning Scientist, Overjet, MA.
5. Yangzi Guo, "*A Study of Feature Interactions and Pruning on Neural Networks*", 2020. Machine Learning Engineer, Citibank, FL.
6. Donghang Li, "*Steerable Convolutional Neural Networks*", 2020. Roche, Shanghai, China.
7. Lizhe Sun. "*Online Feature Selection with Annealing and Its Applications*", 2019. Senior Biostatistician, Merck, Beijing, China.
8. Gitesh Dawer. "*Neural Rule Ensembles: Encoding Feature Interactions into Neural Networks*", 2018. Machine Learning Team, Apple Corporation.
9. Josue Anaya, "*First Steps Towards Image Denoising Under Low-Light Conditions".* PhD in Statistics, 2017. Predictive Revenue Analyst at Bankers Healthcare Group.
10. Ajay Gupta, "*Parameterized Principal Component Analysis".* PhD in Statistics, 2016. Research Scientist at Bank of America, Charlotte, NC.
11. Gary Gramajo, "*Parameter Sensitive Feature Selection with Annealing for Learning on Large Datasets"*. PhD in Statistics, 2015. New Ventures Analyst, Chick-Fil-A Corp, Atlanta GA.
12. Liangjing Ding, "*Sparse Motion Analysis"*. PhD in Scientific Computing, 2013.
13. Nathan Lay, "*Artificial Prediction Markets for Classification, Regression and Density Estimation"*. PhD in Scientific Computing, 2013. Research Scientist at National Cancer Institute, Bethesda, MD.

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Student Mentoring

1. Carmen Trunkett, undergraduate student, FSU
2. Christian Balos, undergraduate student, FSU
3. Matt Resnick, undergraduate student, FSU
4. Kanchanah Kannathass, MS, FSU
5. James Picker, undergraduate student, FSU
6. Josue Anaya, undergraduate student, FSU, later on became PhD student
7. Dan Crane, MS, Statistics department, FSU
8. Wei Zhang, research scientist at the SET corporation.
9. Razvan Ionasec, product manager, Siemens GMBH
10. Richard Socher, chief scientist, Salesforce
11. Chandan Reddy, assistant professor, Virginia Tech University
12. Jonathan Dowdall, software engineer, Google X

Publications

Journal Publications

1. O. Akal, A. Barbu. Fast 3D Liver Segmentation using a Trained Deep Chan-Vese Model. Under Review.
2. M. Wang, A. Barbu. Online Feature Screening for Data Streams with Concept Drift.
3. L. Sun, M. Wang, Y. Guo, A. Barbu. A Novel Framework for Online Supervised Learning with Feature Selection. Under Review.
4. L. Sun, M. Wang, A. Barbu. Stochastic Feature Selection with Annealing and its Applications in Online Supervised Learning. Under Review.
5. R. Aziz, A. Barbu. Annealed Sparsity for Principal Component Analysis with Missing Data. Under Review.
6. S. Liu, A. Barbu. Unsupervised Learning of Mixture Models with a Uniform Background Component. Under Review.
7. Y. She, A. Barbu, Z. Zhang, X. Sui. Slow Kill for Big Data Learning. Under Review.
8. A. Barbu, H. Mou. The Compact Support Neural Network. *Sensors* 21 No. 24, 8494, 2021.

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9. M. Wang, A. Barbu. Are screening methods useful in feature selection? An empirical study. *PLoS One* 14, No. 9, 2019
10. S. Inkoom, J. Sobanjo, A. Barbu, X.Niu. Pavement Crack Rating using Machine Learning Frameworks: Partitioning, Boostrap Forest, Boosted Trees, Naïve Bayes and K - Nearest Neighbors. *Journal of Transportation Engineering, Part B: Pavements*, **145**, No 3, 2019.
11. S. Inkoom, J. Sobanjo, A. Barbu, X. Niu. Prediction of the Crack Condition of Highway Pavements using Machine Learning Models. *Structure and Infrastructure Engineering*, **15**, No 7, 940–953, 2019.
12. K. O'Brien, W. Introne, O. Akal, T. Akal, A. Barbu, M. McGowan, M. Merideth, S. Seward, W. Gahl, B. Gochuico. Prolonged Treatment with Open-label Pirfenidone in Hermansky-Pudlak Syndrome Pulmonary Fibrosis. *Molecular Genetics and Metabolism* **125**, No. 1-2, 168–173, September 2018.
13. A. Gupta, A. Barbu. Parameterized Principal Component Analysis. *Pattern Recognition* **78**, No. 6, 215–227, 2018.
14. J. Anaya, A. Barbu. RENOIR - A Benchmark Dataset for Real Noise Reduction Evaluation. *Journal of Visual Comm. and Image Rep.* **51**, No. 2, 144–154, 2018.
15. A. Barbu, Y. She, L. Ding, G. Gramajo. Feature Selection with Annealing for Computer Vision and Big Data Learning. *IEEE Trans. Pattern Analysis and Machine Intelligence*, **39**, No. 2, 272 – 286, 2017.
16. A. Barbu, L. Lu, H. Roth, A. Seff, R. Summers. An Analysis of Robust Cost Functions for Deep CNN in Computer-Aided Diagnosis. *Computer Methods In Biomechanics And Biomedical Engineering: Imaging & Visualization*, 253-258, 2016
17. A. Barbu, T.F. Wu, Y.N. Wu, Learning Mixtures of Bernoulli Templates by Two-Round EM with Performance Guarantee. *Electronic Journal of Statistics* **8**, No. 2, 3004–3030, 2014.
18. E. Coyle, R. Roberts, E. Collins, A. Barbu. Synthetic Data Generation for Classification via Uni-Modal Cluster Interpolation. *Autonomous Robots*, **37**, No. 1, 27-45, 2014
19. A. Barbu. Hierarchical Object Parsing from Structured Noisy Point Clouds. *IEEE Trans PAMI*. **35,** 1649-1659, 2013

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20. K. Zhang, E. Collins, A. Barbu. An Efficient Stochastic Clustering Auction for Heterogeneous Robotic Collaborative Teams. *Journal of Intelligent and Robotic Systems* **72** 541-558, 2013
21. A. Barbu, N. Lay. Supervised Learning using Artificial Prediction Markets. *Journal of Machine Learning Research*, **13**, 2177-2204, 2012.
22. A. Barbu, M. Suehling, X. Xu, D. Liu, S. K. Zhou, D. Comaniciu. Automatic Detection and Segmentation of Lymph Nodes from CT Data. *IEEE Trans. Medical Imaging*, **31**, No. 2, 240–250, 2012.
23. F. Bunea, A. Tsybakov, M. Wegkamp and A.Barbu. SPADES and mixture models. *Annals of Statistics*, **38**, No. 4, 2525–2558, 2010.
24. F. Bunea and A.Barbu. Dimension reduction and variable selection in case control studies via regularized likelihood optimization. *Electronic Journal of Statistics*, **3**, 1257-1287, 2009.
25. A. Barbu. Training an Active Random Field for Real-Time Image Denoising. *IEEE Trans. Image Processing*, **18**, No 11, 2451 – 2462, November 2009.
26. Y. Zheng, A. Barbu, B. Georgescu, M. Scheuering and D. Comaniciu. Four-Chamber Heart Modeling and Automatic Segmentation for 3D Cardiac CT Volumes Using Marginal Space Learning and Steerable Features. **27**, 11, 1668 – 1681, *IEEE Trans. Medical Imaging*, November 2008.
27. A. Barbu, S.C. Zhu. Generalizing Swendsen–Wang for Image Analysis. *J. Computational and Graphical Statistics*, **16**, No 4, pp.877-900, December 2007.
28. A. Barbu, S.C. Zhu. Generalizing Swendsen-Wang to sampling arbitrary posterior probabilities, *IEEE Trans. Pattern Analysis and Machine Intelligence*, **27**, pp 1239-1253, August 2005.
29. C.V. Ciobanu, A. Barbu, R.M. Briggs, Interactions of incorporated carbon atoms and dimer vacancies on the Si(001) surface. *J. Engineering Materials and Technology*, **127**, pp 462-467, October 2005.
30. A. Barbu. On the range of non-vanishing p-torsion cohomology for $GL_n(F_p)$, *J. Algebra*, **278**, pp 456-472, August 2004.
31. A. Barbu. On a conjecture of Ash. *J. Algebra*, **251**, pp 178-184, May 2002.

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32. A. Barbu. The ring generated by the elements of degree 2 in $H^*(U_n(F_p),Z)$, *J. Algebra*, **237**, pp 247-261, March 2001.

Peer Reviewed Conference Publications

33. N. Lay, A.P. Harrison, S. Schreiber, G. Dawer, A. Barbu. Random Hinge Forest for Differentiable Learning. Submitted.
34. H. Huang, A. Barbu. Predicting Lane Change Decision Making with Compact Support. *IEEE Intelligent Vehicles Symposium*, 2021.
35. Y. Guo, Y. She, A. Barbu. Training Efficient Network Architecture and Weights via Direct Sparsity Control. *IJCNN* 2021.
36. Y. Guo, W.N. Wu, A. Barbu. A study of local optima for learning feature interactions using neural networks. *IJCNN* 2021.
37. B. Bartoldson, A. Morcos, A. Barbu, G. Erlenbacher, The Generalization-Stability Tradeoff in Neural Network Pruning. *Neural Information Processing Systems (NeurIPS),* 2020.
38. D. Li, A. Barbu. Training a Steerable CNN for Guidewire Detection. *Computer Vision and Pattern Recognition (CVPR),* 2020.
39. G. Dawer, Y. Guo, A. Barbu. Generating Compact Tree Ensembles via Annealing. *International Joint Conference on Neural Networks (IJCNN),* 2020.
40. G. Dawer, Y.Guo, S. Liu, A. Barbu. Neural Rule Ensembles: Encoding Sparse Feature Interactions into Neural Networks. *International Joint Conference on Neural Networks (IJCNN)*, 2020.
41. O. Akal, A. Barbu. Learning Chan-Vese. *International Conference in Image Processing (ICIP)*, Taipei, Taiwan, 2019.
42. D. Li, A. Barbu. Training a CNN for Guidewire Detection. *International Conference in Image Processing (ICIP)*, Taipei, Taiwan, 2019
43. O. Akal, A. Barbu, T. Mukherjee, K. George, J. Paquet, E. L. Pasiliao. A Distributed Sensing Approach for Single Platform Image-based Localization. *International Conference on Machine Learning and Applications (ICMLA),* Orlando, FL, 2018
44. H. Mou, A. Barbu. Accurate Dictionary Learning with Direct Sparsity Control. *International Conference in Image Processing (ICIP),* Athens, Greece, 2018.

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45. N. Lay, Y. Tsehay, R. Cheng, S. Gaur, A. Barbu , L. Lu, B. Turkbey, P. Choyke , P. Pinto, R. Summers. A Decomposable Model for Prostate Cancer Detection in Multi-Parametric MRI. *Medical Imaging and Computer Assisted Intervention (MICCAI),* 2018, Granada, Spain
46. A. Barbu. A Directed Graph Approach to Active Contours. *International Conference in Image Processing (ICIP)*, Beijing, 2017.
47. D. Barbu, A. Barbu. Traditional and Nontraditional Undergraduate Enrollments across All Sectors. *Association for Institutional Research Annual Conference*, Washington DC, 2017
48. D. Barbu, A. Barbu. Do Macroeconomic and Financial Aid Indicators Impact Graduate Enrollments? *Association for Institutional Research Annual Conference*, New Orleans, May 2016
49. A. Barbu, L. Lu, H. Roth, A. Seff, R. Summers. An Analysis of Robust Cost Functions for Deep CNN in Computer-Aided Diagnosis. *DLMIA Workshop, Medical Imaging and Computer Assisted Intervention (MICCAI)* 2015, Munich, Germany.
50. A. Seff, L. Lu, A. Barbu, H. Roth, H.C. Shin, R. Summers. Leveraging Mid-Level Semantic Boundary Cues for Automated Lymph Node Detection. *Medical Imaging and Computer Assisted Intervention (MICCAI)* 2015, Munich, Germany.
51. A. Meyer-Baese, A. Barbu, M. Lobbes, S. Hoffmann, B. Burgeth, A. Kleefeld, U. Meyer-Baese. Computer-aided diagnosis of breast MRI with high accuracy optical flow estimation. *International Society for Optics and Photonics Conference (SPIE)*. 2015
52. A. Meyer-Baese, D. Fratte, A. Barbu, K. Pinker-Domenig. Dynamical complex network theory applied to the therapeutics of brain malignancies. *SPIE* 2015
53. A. Barbu, N. Lay. Artificial prediction markets for lymph node detection. EHB 2013
54. A. Barbu, M. Pavlovskaia, S.C. Zhu. Rates for Inductive Learning of Compositional Models. *Association for the Advancement of Artificial Intelligence (AAAI) Workshop Replearn* 2013, Bellevue, Washington.
55. L. Ding, A. Barbu, A. Meyer-Baese, Learning a Quality-Based Ranking for Feature Point Trajectories. *Asian Conference in Computer Vision*, Daejeon, Korea, 2012

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56. L. Ding, A. Barbu, A. Meyer-Baese, Motion Segmentation by Velocity Clustering with Estimation of Subspace Dimension. *Asian Conference in Computer Vision Workshop DTCE*, Daejeon, Korea, 2012, oral presentation.
57. K. Zhang, E. Collins, A. Barbu. An Efficient Stochastic Clustering Auction for Heterogeneous Robot Teams. *International Conference on Robotics and Automation (ICRA)* 2012.
58. W. Wu, T. Chen , A. Barbu, P. Wang, N. Strobel, S. Zhou, D. Comaniciu. Learning-based Hypothesis Fusion for Robust Catheter Tracking in 2D X-ray Fluoroscopy. *Computer Vision and Pattern Recognition (CVPR) 2011*
59. K. Zhang, E. Collins, A. Barbu. Efficient Stochastic Clustering Auctions for Agent-Based Collaborative Systems. *Workshop on Agent Technology in Robotics and Automation, the 2011 International Conference on Robotics and Automation (ICRA),* Shanghai, China, May 9-13, 2011.
60. K. Zhang, E. Collins, A. Barbu. A Novel Stochastic Clustering Auction for Task Allocation in Multi-Robot Teams. *International Conference on Intelligent Robots and Systems (IROS)* 2010
61. A. Barbu, M. Suehling, X. Xu, D. Liu, S. K. Zhou, D. Comaniciu. Automatic Detection and Segmentation of Axillary Lymph Nodes. *MICCAI* 2010.
62. N. Lay, A. Barbu. Supervised Aggregation of Classifiers using Artificial Prediction Markets. *International Conference in Machine Learning (ICML)* 2010
63. A. Barbu. Learning Real-Time MRF Inference for Image Denoising. *CVPR* 2009
64. A. Barbu, R. Ionasec. Boosting Cross-Modality Image Registration. *Joint Urban Remote Sensing Event*, 2009
65. A. Meyer-Baese, S. Lespinats, F. Steinbrucker, A. Saalbach, T. Schlossbauer, A. Barbu. Visual exploratory analysis of DCE-MRI data in breast cancer based on novel nonlinear dimensional data reduction techniques. *SPIE Defense and Security,* 2009
66. S. Seifert, A. Barbu, S. Zhou, D. Liu, J. Feulner, M. Huber, M. Sühling, A. Cavallaro, D. Comaniciu. Hierarchical parsing and semantic navigation of full body CT data. *SPIE Medical Imaging*, 2009

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67. L. Lu, A. Barbu, J. Liang, L. Bogoni, M. Salganicoff and D. Comaniciu. Simultaneous Detection and Registration for Ileo-Cecal Valve Detection in 3D CT Colonography. *European Conference in Computer Vision (ECCV)* 2008
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