**Patents**

1. “Multi-core CPU and GPU Implementation of Discrete Periodic Radon Transform and Its Inverse”, Inventors: Cesar Carranza, Daniel Llamocca, and **Marios S. Pattichis**, filed on December 16th, 2015.
2. “Fast and Scalable Architectures and Algorithms for the Computation of the Forward and Inverse Discrete Periodic Radon Transform with Application to 2D Convolutions and Cross-Correlations”, Inventors: Cesar Carranza, Daniel Llamocca, and **Marios S. Pattichis**, filed on December 16th, 2015.
3. “System and Methods for Adaptive Optimization for Video Coding and Video Delivery,” Inventors: **Marios S. Pattichis**, Yuebing Jiang, Cong Zong, Gangadharan Esakki, Venkatesh Jatla, and Andreas Panayides, *Patent filed on* 07/31/2015.
4. “System and Methods for Dynamic Management of Hardware Resources,” Inventors: **Marios S. Pattichis**, Yuebing Jiang, and Daniel Llamocca, STC Ref. No. 2013-028-03, Continuation patent filed on July 6th, 2015.
5. “System And Methods For Computing Forward and Inverse Discrete Periodic Radon Transform,” Inventors: Cesar Carranza, Daniel Llamocca, and **Marios S. Pattichis**, *Patent* filed on December 16th, 2014.
6. “Role Specific Views for Laparoscopic Surgery,” Inventors: Timothy Perez, Yuebing Jiang, and **Marios S. Pattichis**, *Patent* filed on October 31st, 2013.
7. “System and Methods for Dynamic Management of Hardware Resources,” Inventors: **Marios S. Pattichis**, Yuebing Jiang, and Daniel Llamocca, U.S. Pattent 9,111,059 B2, approved on Aug. 18th, 2015.
8. "System and Methods of Regularized Optimization For Matrix Factorization And Image and Video Reconstruction," Inventors: Paul Rodriguez-Valderrama, **Marios S. Pattichis**, and Victor Manuel Murray-Herrera, U.S. Patent 8,908,992 B1, approved on Dec. 9th, 2014.
9. “System and Methods of Amplitude-Modulation Frequency-Modulation (AM-FM) Demodulation for Image and Video Processing,” Victor Manuel Murray Herrera, **Marios S. Pattichis**, Peter Soliz, Carla Paola Agurto Rios and Herbert T. Davis III, U.S. Patent 8,515,201 B1, approved on Aug. 20th, 2013, biomedical applications licensed to VisionQuest Biomedical, LLC.

**Journal editorials**

1. Loizou, C., Morega, M., Kyriacou, E., Pasca, S., Petroudi, S., Bamidis, P., **Pattichis, M.S.**, and Pattichis, C.S. “Guest Editorial to Special Issue on Biomedical Monitoring Technologies,” *International Journal of Monitoring and Surveillance Technologies Research* (IJMSTR), Parts 1 and 2, vol. 1, no. 4, pp. October-December 2013.
2. Pattichis, C.S., Bamidis, P.D., Christodoulou, C., Kyriakou, E., **Pattichis, M.S.**, Mitsis, G.D., and Pitris, C., “Editorial for Special Issue on Biomedical Signal Processing and Analysis,” *Biomedical Signal Processing and Control*, vol. 6, no. 3, pp. 217-218, 2011.
3. Pattichis, C.S., Schizas, C.N., E., Kyriakou, E., Fotiadis, D. I., **Pattichis, M.S.**, and Bamidis, P.D., “Guest Editorial: Introduction to the Special Issue on Citizen Centered e-Health Systems in a Global Healthcare Environment: Selected Papers from ITAB 2009,” *IEEE Transactions on Information Technology in Biomedicine*, vol. 15, no. 1, pp. 3-10, January 2011, PMID: 21172757.
4. Pattichis, C.S., Schizas, C.N., **Pattichis, M.S.**, Micheli-Tzanakou, E., Kyriakou, E., and Fotiadis, D. I., “Guest Editorial: Introduction to the Special Section on Computational Intelligence in Medical Systems,” *IEEE Transactions on Information Technology in Biomedicine*, vol. 13, no. 5, pp. 667-672, September 2009.

**Journal papers (published, accepted, or to appear)**

1. Silva, R.F., Plis, S.M., Sui, J., **Pattichis, M.S.,** Adalı, T., and Calhoun, V.D., “Blind Source Separation for Unimodal and Multimodal Brain Networks: A Unifying Framework for Subspace Modeling,” *IEEE Journal of Selected Topics in Signal Processing*, in press, 2016.
2. Carranza, C., Llamocca, D., and **Pattichis, M.S.**, “Fast and Scalable Computation of the Forward and Inverse Discrete Periodic Radon Transform,” *IEEE Transactions on Image Processing*, vol. 25, no. 1, pp. 119-133, Jan. 2016*.*
3. Murray, V., **Pattichis, M.S.**, Llamocca, and Lyke, J., “Field Programmable Wiring Systems,” invited, *Proceedings of IEEE,* special issue on *Reconfigurable Systems: Advanced Applications and Technologies,* vol. 103, no. 7, pp. 1159-1180, July 2015.
4. Agurto, C., Yu, H., Murray, V., **Pattichis, M.S.**, Nemeh, S., Barriga, S., and Soliz, P., “A Multiscale Decomposition Approach to Detect Abnormal Vasculature in the Optic Disc,” *Computer Graphics and Image Processin*g, vol. 42, pp. 137-149, July 2015.
5. Neofytou, M.S., Tanos, V., **Pattichis, M.S.**, Pattichis, C.S. and Kyriacou, E.C., “Computer Aided Diagnosis in Hysteroscopic Imaging,” *IEEE Journal of* *Biomedical Health Informatics*, vol. 19, no. 13, pp. 1129-1136, May 2015
6. Panayides, A.S., **Pattichis, M.S.**,Loizou, C.P., Pantziaris, M., Constantinides, A.G., and Pattichis, C.S., “An Effective Ultrasound Video Communication System Using Despeckle Filtering and HEVC,” *IEEE Journal of Biomedical and Health Informatics*, vol. 19, no. 2, pp. 668-676, March 2015.
7. Saqib, F., Dutta, A., Plusquellic, J., Ortiz, P., and **Pattichis, M.S.**, “Pipelined Decision Tree Classification Accelerator Implementation in FPGA (DT-CAIF),” *IEEE Transactions on Computers*, vol. 64, no. 1, pp. 280-285, Jan. 2015*.*
8. Llamocca, D. and **Pattichis, M.S.**, “Dynamic Energy, Performance, and Accuracy Optimization and Management for Separable 2-D Filtering for Digital Video Processing,” *ACM Transactions on Reconfigurable Technology and Systems (TRETS)*, vol. 7, no. 4, article 30, 30 pages, Jan. 2015.
9. Jiang, Y. and **Pattichis, M.S.**, “A Dynamically Reconfigurable Architecture System for Time-Varying Image Constraints (DRASTIC) for Motion JPEG,” 17 pages, *Journal of Real-time Image Processing*, 2014.
10. Agurto, C., Murray, V., Yu, H., Wigdahl, J.*,* **Pattichis, M.S.**, Nemeth, S., Barriga, S., and Soliz, P., “A Multiscale Optimization Approach to Detect Exudates in the Macula,” *IEEE Journal of Biomedical and Health Informatics*, vol. 18, no. 4, pp. 1328-1336, 2014.
11. Llamocca, D., **Pattichis, M.**, "A Self-Reconfigurable Platform for the Implementation of 2D Filterbanks with Real and Complex-valued Inputs, Outputs, and Filter Coefficients", *VLSI Design*, vol. 2014 (2014), Article ID 651943, 24 pages, http://www.hindawi.com/journals/vlsi/2014/651943/.
12. Loizou, C.P., Murray, V., **Pattichis, M.S.**, Pantziaris, M., Nicolaides, A.N., and Pattichis, C.S., “Despeckle Filtering for Multiscale Amplitude-Modulation Frequency-Modulation (AM-FM) Texture Analysis of Ultrasound Images of the Intima-Media Complex,” *International Journal of Biomedical Imaging*, vol. 2014 (2014), Article ID 518414, 13 pages, http://www.hindawi.com/journals/ijbi/2014/518414/.
13. Llamocca, D., Murray, V., Jiang, Y., Pattichis, M., Lyke, J., and Avery, K., "A Scalable, Open-Source Architecture for Real-Time Monitoring of Adaptive Wiring Panels," *AIAA Journal of Aerospace Information Systems*, vol. 11, no. 6, pp. 344-358, 2014.
14. Panayides, A., **Pattichis, M.S.**, and Pattichis, C.S., “M-Health Systems Use Diagnostically Driven Medical Video Technologies,” (**invited**), *IEEE Signal Processing Magazine*, vol. 30, no. 6, pp. 163-172, November 2013*.*
15. Celedón-Pattichis, S., LópezLeiva, C. A., **Pattichis, M. S.**, & Llamocca, D., “An

interdisciplinary collaboration between computer engineering and mathematics / bilingual education to develop a curriculum for underrepresented middle school students,” *Cultural Studies in* *Science Education*, vol. 8, no. 4, pp. 873-887, December 2013.

1. Panayides, A., Antoniou, Z., Mylonas, Y., **Pattichis, M.S.,** Pitsillides, A., Constantinides, A.G., Pattichis, C.S., “High-Resolution, Low-delay, and Error-resilient Medical Ultrasound Video Communication Using H.264/AVC Over Mobile WiMAX Networks,” *IEEE Journal of Biomedical and Health Informatics*, pp. 619-628, May 2013*.*
2. Murray, V., Llamocca, Lyke, J., Avery, K., Jiang, Y., and **Pattichis, M.S.**, “Cell-based Architecture for Adaptive Wiring Panels: A First Prototype,” *Journal of the American Institute of Aeronautics and Astronautics*, vol. 10, no. 4, pp. 187-208, April 2013.
3. Llamocca, D. and **Pattichis, M.S.**, “A Dynamically Reconfigurable Pixel Processor System Based on Power/Energy-Performance-Accuracy Optimization,” *IEEE Transactions on Circuits and Systems for Video Technology*, vol. 23, no. 3, pp. 488-502, March 2013*.*
4. Jeromin, O.M., **Pattichis, M.S.**, and Calhoun, V.D., “Optimal Compressed Sensing Reconstructions of fMRI using Deterministic and Stochastic Sampling Geometries,” *Biomedical Engineering Online*, vol. 11, no. 25, 36 pages, 2012*.*
5. Jeromin, O.M. and **Pattichis, M.S.**, “Multiscale Sampling Geometries and Methods for Deterministic and Stochastic Reconstructions of Magnitude and Phase Spectra of Satellite Imagery” *IEEE Transactions on Geosciences and Remote Sensing*, vol. 50, no. 10, pp. 3678-3692, Oct. 2012*.*
6. Kyriacou, E., Petroudi, S., Pattichis, C.S., **Pattichis, M.S.**, Griffin, M., Kakkos, S., and Nicolaides, A., “Prediction of High Risk Asymptomatic Carotid Plaques Based on Ultrasonic Image Features,” Special issue on “Atherosclerotic Cardiovascular Health Informatics: Risk Screening and Intervention,” *IEEE Transactions on Information Technology in Biomedicine*, vol. 16, no. 5, pp. 966-973, 2012.
7. Yu, H., Barriga, E.S., Agurto, C., Echegaray, S., **Pattichis, M.S.**, Bauman, W., and Soliz, P., “Fast Localization and Segmentation of Optic Disc in Retinal Images Using Directional Matched Filtering and Level Sets,” *IEEE Transactions on Information Technology in Biomedicine*, vol. 16, no. 4, pp. 644-657, July 2012.
8. Christodoulou, C.I., Kaplanis, P.A., Murray, V., **Pattichis, M.S.**, Pattichis, C.S., and Kyriakides, T., "Multi-Scale AM-FM Analysis for the Classification of Surface Electromyographic Signals," *Journal of Biomedical Signal Processing and Control,* vol. 7, no. 3, pp. 265-269, 2012.
9. Murray, V., **Pattichis, M.S.**, Barriga, E.S., and Soliz, P., “Recent Multiscale AM-FM Methods in Emerging Applications in Medical Imaging,” *EURASIP Journal on Advances in Signal Processing (Springer)*, vol. 2012, no. 1, 23 pages, 2012.
10. Lambrou, A., Papadopoulos, H., Kyriacou, Pattichis, C.S., **Pattichis, M.S.**, Gammerman, A., and Nicolaides, A., “Evaluation of the Risk of Stroke With Confidence Predictions Based on Ultrasound Carotid Image Analysis,” invited to Special Issue on Selected Papers from AIAI 2010, *International Journal on Artificial Intelligence Tools*, vol. 21, no. 4, 1240016, 18 pages, 2012.
11. Agurto, C., Barriga, S., Murray, V., Nemeth, S., Crammer, R., Bauman, W., Zamora, G., **Pattichis, M.S.**, and Soliz, P., "Automatic Detection of Diabetic Retinopathy and Age-Related Macular Degeneration in Digital Fundus Images, " *Investigative Ophthalmology and Visual Science*, vol. 52, no. 8, pp. 5862-5871, July 2011, PMID: 21666234.
12. Hoffman, C. and **Pattichis, M.S.**, “A High-Speed Dynamic Partial Reconfiguration Controller Using Direct Memory Access Through a Multiport Memory Controller and Overclocking with Active Feedback,” *International Journal of Reconfigurable Computing*, vol. 2011, Article ID 439072, 10 pages, 2011.
13. Vera, A.G., **Pattichis, M.S.**, and Lyke, J., “A Dynamic Dual Fixed Point Arithmetic Architecture for FPGAs,” *International Journal of Reconfigurable Computing*, vol. 2011, Article ID 586865, 19 pages, 2011.
14. Panayides, A., **Pattichis, M.S.**, Pattichis, C.S., Loizou, C., and Pitsillides, A., “A Tutorial for Emerging Wireless Medical Video Transmission Systems,” *IEEE Antennas & Propagation Magazine*, vol. 53, no. 2, pp. 43-50, April 2011.
15. Panayides, A., **Pattichis, M.S.**, Pattichis, C.S., Loizou, C.P., Patziaris, M., and Pitsillides, A., “Atherosclerotic Plaque Ultrasound Video Encoding, Wireless Transmission, and Quality Assessment Using H.264,” *IEEE Transactions on Information Technology in Biomedicine*, vol. 15, no. 3, pp. 387-397, May 2011, PMID: 21233053.
16. Sergio, M., **Pattichis, M.S.**, and Barriga, E.S., “A Review of Motion Estimation Methods for Non-Invasive Ultrasound Motion and Emerging Strain Imaging Methods of Carotid Artery Plaques,” *International Journal of Experimental and Computation* Biomechanics, vol. 1, no. 4, pp. 359-380, 2011.
17. Ramachandran, J., **Pattichis, M.S.**, Scuderi, L.A., and Baba, J.S., “Tree Image Growth Analysis Using Instantaneous Phase Modulation,” *EURASIP Journal on Advances in Signal Processing*, Special Issue: Recent Advances in Theory and Methods for Non-stationary Signal Analysis, vol. 2011, Article ID 518602, 22 pages, 2011.
18. Loizou, C.P., Murray, V., **Pattichis, M.S.**, Pantziaris, M., and Pattichis, C.S., “Multiscale Amplitude-Modulation Frequency-Modulation (AM-FM) Analysis of Ultrasound Images of the Intima and Media Layers of the Carotid Artery,” *IEEE Transactions on Information Technology in* *Biomedicine*, vol. 15, no. 2, pp. 178-188, 2011, PMID 20889436*.*
19. Barriga, E.S., **Pattichis, M.S.**, Ts’o, D., Abramoff, M., Kardon, R., Kwon, Y. and Soliz, P., “Independent Component Analysis using Prior Information for Signal Detection in a New Functional Imaging Systems of the Retina,” *Medical Image Analysis*, vol. 15, no. 1, pp. 35-44, February 2011, PMID 20655800.
20. Yu, H., **Pattichis, M.S.**, Agurto, C., and Goens, M. Beth, “A 3D Freehand Ultrasound System for Multi-view Reconstructions from Sparse 2D Scanning Planes,” *Biomedical Engineering Online*, vol. 10, no. 7, 22 pages, Jan. 2011, PMID 21251284.
21. Loizou, C.P., Murray, V., **Pattichis, M.S.**, Seimenis, I., Pantziaris, M., and Pattichis, C.S., “Multiscale Amplitude-Modulation Frequency-Modulation (AM-FM) Texture Analysis of Multiple Sclerosis in Brain MRI Images,” *IEEE Transactions on Information Technology in Biomedicine*, vol. 15, no. 1, pp. 119-129, Jan. 2011, PMID 21062681.
22. Llamocca, D., **Pattichis, M.S.**, and Vera, G.A., “Partial Reconfigurable FIR Filtering System Using Distributed Arithmetic,” vol. 2010, 14 pages, *International Journal of Reconfigurable Computing,* vol. 2010, Article ID 357978, 14 pages, doi:10.1155/2010/357978.
23. Kyriacou, E., Pattichis, C.S., **Pattichis, M.S.**, Loizou, C.P., Christodoulou, C., Kakkos, S. and Nicolaides, A., “A Review of Non-invasive Ultrasound Image Processing Methods in the Analysis of Carotid Plaque Morphology for the Assessment of Stroke,” *IEEE Transactions on* *Information Technology in Biomedicine*, vol. 14, no. 4, pp. 1027-1038, July 2010, PMID 20378477.
24. Meyer-Baese, U., Vera, A., Meyer-Baese, A., **Pattichis, M.** and Perry, R., “An Undergraduate Course and Laboratory in Digital Signal Processing with Field Programmable Gate Arrays,” *IEEE Transactions on Education*, vol. 53, no. 4, pp. 638-645, Nov. 2010.
25. Murray, V., Rodriguez, P. and **Pattichis, M.S.**, “Multi-scale AM-FM Demodulation and Reconstruction Methods with Improved Accuracy,” *IEEE Transactions on Image Processing*, vol 19, no. 2, pp. 1138-1152, May 2010, PMID: 20071260.
26. Agurto, C., Murray, V., Barriga, E., Murillo, S., **Pattichis, M.S.**, Davis, H., Russell, S.R., Abramoff, M.D., and Soliz, P., “Multiscale AM-FM Methods for Diabetic Retinopathy Lesion Detection,” *IEEE Transactions on Medical Imaging*, vol. 29, no. 2, pp. 502-512, February 2010, PMID: 20129850*.*
27. Kief, C. J., **Pattichis, M.S.**, Pollard, L.H., Vera, G.A. and Parra, J.E., “An XUP-UNM Educational Platform – A Dual FPGA Platform for Reconfigurable Logic,” *Computer Applications in Engineering Education*, Wiley Interscience, vol. 17, no. 2, pp. 232-239, June 2009.
28. Loizou, C.P., Pantziaris, M., **Pattichis, M.S.**, Kyriakou, E. and Pattichis, C.S., “Ultrasound Image Texture Analysis of the Intima and Media Layers of the Common Carotid Artery and its Correlation with Age and Gender,” invited from conference paper presentation in IEEE BIBE 2008, *Computerized Medical Imaging and Graphics* (Elsevier), vol. 33, no. 4, pp. 317-324, June 2009, PMID: 19304453.
29. **Pattichis, M.S.**, Soliz, P. and Cacoullos, T., “New Models for Region of Interest Reader Classification Analysis in Chest Radiographs,” *Pattern Recognition,* *Special Issue of Digital Image Processing and Pattern Recognition Techniques for the Detection of Cancer,* (doi: 10.1016/j.patcog.2008.09.021), vol. 42, no. 6, pp. 1058-1066, June 2009.
30. Kyriacou, E., **Pattichis, M.S.**, Pattichis, C.S., Mavrommatis, A., Christodoulou, C.I., Kakkos, S. and Nicolaides, A., “Classification of Atherosclerotic Carotid Plaques Using Morphological Analysis on Ultrasound images,” (**a best conference paper award**) ***invited*** in special issue on Emerging Artificial Intelligence Applications and Innovations: Papers from AIAI 2006, *Journal of Applied Intelligence*, Springer, vol. 30, no. 1, pp. 3-23, February 2009.
31. Neofytou, M.S., Tanos, V., **Pattichis, M.S.**, Pattichis, C.S., Kyriacou, E.C., and Koutsouris, D.D., “A standardized protocol for texture feature analysis of endoscopic images in gynaecological cancer,” *Biomedical Engineering OnLine*, 6:44, 44 pages, doi:10.1186/1475-925X-6-44, Nov 2007, PMID: 18047655*.*
32. Kyriacou, E.C., Pattichis, C.S., Karaolis, M.A., Loizou, C.P., Christodoulou, C.I., **Pattichis,** **M.S.**, Kakkos, S., and Nicolaides, A., “An Integrated System for Assessing Stroke Risk,” *IEEE Engineering in Medicine and Biology Magazine*, Special Issue on Image, Signal and Distributed Data Processing for Networked e-Health Applications, vol. 26, no. 5, pp. 43-50, Sept.-Oct. 2007, PMID: 17941322.
33. Barriga, E. S., **Pattichis, M. S.**, Ts’o, D., Abramoff, M., Kardon, R., Kwon, Y., and Soliz, P., “Spatiotemporal independent component analysis for the detection of functional responses in cat retinal images,” *IEEE Transactions on Medical Imaging*, vol. 26, pp. 1035-1045, Aug. 2007, PMID: 17695124.
34. Kern, J. and **Pattichis, M.S.**, “Robust multispectral image registration using mutual information models”, *IEEE Transactions on Geosciences and Remote Sensing*, vol. 45, no. 5, pp. 1494-1505, May 2007.
35. **Pattichis, M.S.** and Bovik, A.C., “Analyzing image Structure by multidimensional frequency Modulation,” *IEEE Transactions on Pattern Analysis and Machine Intelligence,* vol. 29, no. 5, pp. 753-766,May 2007, PMID: 17356197.
36. Kyriacou, E., **Pattichis, M.S.**, Pattichis, C.S., Panayides, A., and Pitsillides, A., “m-Health e-Emergency Systems: Current Status and Future Directions,” ***invited*** in *IEEE Antennas* *and Propagation Magazine,* vol. 49., no. 1, pp. 216-231, Feb. 2007.
37. "Educational Uses of FPGAs," D. Bouldin, Ed., short (<1 page) ***invited article*** describing UNM's labs, cites authors: **M.S. Pattichis**, H. Pollard., J. Parra, A. Vera, A., and C. Kief as "driving Personnel," *IEEE Circuits and Devices Magazine*, pp. 4, Sept/Oct 2004.
38. Pattichis. C.S., Kyriacou, E., Voskarides, S., **Pattichis, M.S.**, Istepanian, R., and Schizas, C.N. “Wireless Telemedicine Systems: An Overview,” ***invited*** in *IEEE Antennas* *and Propagation Magazine,* vol. 44, no. 2, pp. 143-153, April 2002.
39. Lee, S., **Pattichis, M.S.**, and Bovik, A.C. “Foveated Video Quality Assessment,” *IEEE* *Transactions on Multimedia,* vol. 4, no. 1, pp. 129-132, March 2002.
40. Lee, S., **Pattichis, M.S.**, and Bovik, A.C., “Foveated Video Compression with Optimal Rate Control,” *IEEE Transactions on Image Processing*, vol. 10, no. 7, pp. 977-992, July 2001, PMID: 18249671.
41. **Pattichis, M.S.**, Panayi, G., Bovik, A.C., and Shun-Pin, H., “Fingerprint Classification Using an AM-FM Model,” *IEEE Transactions on Image Processing,* vol. 10, no. 6, pp. 951-954, June 2001.
42. **Pattichis, M.S.**, Bovik, A.C., Havlicek, J.W., and Sidiropoulos, N.D., “Multidimensional Orthogonal FM Transforms,” *IEEE Transactions on Image Processing,* vol. 10, no. 3, pp. 448-464, March 2001, PMID: 18249634.
43. **Pattichis, M.S.**, Pattichis, C.S., Avraam, M., Bovik, A.C., and Kyriakou, K. “AM-FM Texture Segmentation in Electron Microscopic Muscle Imaging,” *IEEE Transactions on Medical Imaging,* vol. 19, no. 12, pp. 1253-1258, December 2000, PMID: 11212374.
44. Sidiropoulos, N.D., **Pattichis, M.S.**, Bovik, A.C., and Havlicek, J.W., “COPERM: Transform-Domain Energy Compaction by Optimal Permutation,” *IEEE Transactions on Signal Processing*, vol. 47, no. 6, pp. 1679-1688, June 1999.
45. Pattichis, C.S., and **Pattichis, M.S.**, “Time-Scale Analysis of Motor Unit Action Potentials,” *IEEE Transactions on Biomedical Engineering*, vol. 46, no. 11, pp. 1320-1329, November 1999.

**Select medical journal publications**

1. Soliz, P., Pattichis C.S., **Pattichis M.S.**, James D., and Ketai, L., “Texture analysis of opacity profusion in chest radiographs of miners with pneumoconiosis,” *American Journal of* *Respiratory & Critical Care Medicine*, 2002; 165:A529 (short (<1 page) journal publication of conference abstract).
2. **Pattichis, M.S.**, Soliz, P., Pattichis, C., James, D., Ketai, L. “Computer assisted morphological analysis of opacities on the International Labor Organization standard radiographs for the pneumoconioses,” *American Journal of Respiratory and Critical Care* *Medicine*, 2002; 165:A530 (short (<1 page) journal publication of conference abstract).

**Journal papers that are in review or pending submission**

1. Carranza, C., Llamocca, D., and **Pattichis, M.S.**, “Fast 2D Convolutions and Cross-Correlations Using Scalable Architectures,” *IEEE Transactions on Image Processing*, submitted in July 2016*.*
2. Carranza, C., Llamocca, D., and **Pattichis, M.S.**, “Fast and Scalable Computation of the Forward and Inverse Discrete Periodic Radon Transform on multicore CPUs and GPUs,” *IEEE Transactions on Image Processing*, submitted in July 2016*.*
3. Stone, V., and **Pattichis, M.S.**, “Motion-based decomposition of digital video,” in preparation.
4. Kyriacou, E.C., **Pattichis, M.S.**, Murray, V., Petroudi, S., Nicolaides, A., and Pattichis, C.S., “Prediction of High Risk Asymptomatic Ultrasound Imaging Carotid Plaques Based on Multiscale Amplitude-Modulation Frequency-Modulation (AM–FM) Texture Features,” in preparation.
5. Carranza, C., Murray, V., Pattichis, M.S., and Barriga, E.S., “Multiscale AM-FM Decompositions with GPU acceleration for Diabetic Retinopathy Screening,” in preparation.
6. Murillo, S., and **Pattichis, M.S.**, “No-reference Blind Optimization for Motion Estimation,” in preparation.

**Books/Proceedings**

1. **Pattichis, M.S.**, General Chair, *2008 IEEE Southwest Symposium on Image Analysis and Interpretation,* Santa-Fe, New Mexico, March 2008.

**Book chapters**

1. LópezLeiva, C., Celedón-Pattichis, S., **Pattichis, M. S.**, & Morales Flores, J. (in press). Teaching and learning binary numbers: Underrepresented students accessing high-quality STEM practices. In A. Fernandes, S. Crespo, & M. Civil (Eds.), Access and equity: Promoting high-quality mathematics in grades 6-8. Reston, VA: National Council of Teachers of Mathematics.
2. LópezLeiva, C., Celedón-Pattichis, S., & **Pattichis, M. S.** (in press). “Participation in the Advancing Out-of-School Learning in Mathematics and Engineering (AOLME) project: Supporting middle school Latinas’ bilingual and STEM identities,” In B. Polnick & B. Irby (Eds.), *Women of color in STEM: Navigating the waters of public schools*. Charlotte, NC: Information Age Publishing.
3. Kyriacou, E., Constantinides, P., Pattichis, C.S., **Pattichis, M.S.**, and Panayides, A., “eEmergency Healthcare Informatics,” Chapter 64, Ed. by J. D. Bronzino and D.R. Peterson, *Biomedical Signals, Imaging, and Informatics, 4th Ed.*, CRC Press, 2015.
4. Christodoulou, C.I., Kyriacou, E., **Pattichis, M.S.**, and Pattichis, C.S., “Plaque Feature Extraction,” Ed. by A. Nicolaides, K. Beach, E. Kyriakou and C.S. Pattichis, Chapter 14 in *Ultrasound and Carotid Bifurcation Atherosclerosis*, Springer, pp. 223-246, 2012.
5. Kyriacou, E., Christodoulou, **Pattichis, M.S.**, Pattichis, C.S., and Kakkos, S., “Plaque Classification,” Ed. by A. Nicolaides, K. Beach, E. Kyriakou and C.S. Pattichis, Chapter 15 in *Ultrasound and Carotid Bifurcation Atherosclerosis*, Springer, pp. 247-262, 2012.
6. Murillo, S., and **Pattichis, M.S.**, “Motion Estimation of Carotid Artery Plaques,” Ed. by A. Nicolaides, K. Beach, E. Kyriakou and C.S. Pattichis, Chapter 21 in *Ultrasound and Carotid Bifurcation Atherosclerosis*, Springer, pp. 355-378, 2012.
7. Kyriacou, E., Christodoulou, C.I., Loizou, C., **Pattichis, M.S.**, Pattichis, C.S., Kakkos, S. and Nicolaides, A., “Assessment of Stroke by Analyzing Carotid Plaque Morphology,” Chapter XI, in *Handbook of Research on Advanced Techniques in Diagnostic Imaging and Biomedical Applications*, Ed. T.P. Exarchos, A. Papadopoulos, D.I. Fotiadis, 21 pages, Chapter 11, IGI Global, PA, USA, ISBN: 978-1-60566, 2009.
8. Neofytou, M.S., Pattichis, C.S., Tanos, V., **Pattichis, M.S.** and Kyriacou, E.C., “Quantitative Analysis of Hysteroscopy Imaging in Gynaecological Cancer,” Chapter XII, in *Handbook of Research on Advanced Techniques in Diagnostic Imaging and Biomedical Applications*, Ed. T.P. Exarchos, A. Papadopoulos, D.I. Fotiadis, 16 pages, Chapter 12, IGI Global, PA, USA, ISBN: 978-1-60566, 2009.
9. Panayides, A., **Pattichis, M.S.**, Pattichis, C.S., Loizou, C.P., Pantziaris, M., and Pitsillides, A., “Towards Diagnostically Robust Medical Ultrasound Video Streaming Using H.264,” *Biomedical Engineering*, Ed. By A. Alexandre Barros De Mello, IN-TECH, Vienna, Austria, pp. 219-237, 2009.
10. Pattichis, C.S., Schnorrenberg, F., Tsapatsoulis, Schizas, C.N., **Pattichis, M.S.**, Kyriacou, E., “A Biopsy Analysis Support System for the Detection and Classification of Breast Cancer Nuclei,” in *Emerging Technology in Breast Imaging and Mammography*, Ed. J. Suri, R. M. Rangayan and S. Laxminarayan, American Scientific Publishers, CA, USA, pp. 441-462, 2008.
11. Pattichis, C.S., Kyriacou, E., Christodoulou, C., **Pattichis, M.S.**, Loizou, C., Pantziaris, M., and Nikolaides, A., “Cardiovascular: Ultrasonic Imaging in Vascular Cases,” invited chapter in *Wiley Encyclopedia of Biomedical Engineering*, Ed. M. Akay, Wiley, (DOI: 10.1002/9780471740360.ebs1322), 12 pages, 2006.
12. Vieyres, P., Poisson, G., Triantafyllidis, G., **Pattichis, M.**, and Kontaxakis, G., "Future Challenges and Recommendations on Echography Systems and Services," in *M-Health:* *Emerging Mobile Health Systems*, Ed. R.H. Istepanian, S. Laxminarayan, and C.S. Pattichis, pp. 509-514, 2006.
13. **Pattichis, M. S.**, "Future Challenges and Recommendations", Signal, Image, and Video Compression for e-Health Applications section, in *M-Health: Emerging Mobile Health Systems*, Ed. R.H. Istepanian, S. Laxminarayan, and C.S. Pattichis, pp. 365-370, 2006.
14. **Pattichis, M. S.**, "Section Overview", Signal, Image, and Video Compression for e-Health Applications Section, in *M-Health: Emerging Mobile Health Systems*, Ed. R.H. Istepanian, S. Laxminarayan, and C.S. Pattichis, pp. 273-276, 2006.
15. Rodriguez, P. V., **Pattichis, M.S.**, Goens, M.B., and Abdallah, R., “Object-based Ultrasound Video Processing for Wireless Transmission in Cardiology,” chapter in *M-Health: Emerging Mobile Health Systems*, Ed. R.H. Istepanian, S. Laxminarayan, and C.S. Pattichis, pp. 491-508, 2006.
16. **Pattichis, M.S.**, Cai, S., Pattichis, C.S., and Abdallah, R., “An Overview of Digital Video Compression for Mobile Health Systems,” chapter in *M-Health: Emerging Mobile Health Systems*, Ed. R.H. Istepanian, S. Laxminarayan, and C.S. Pattichis, Springer, pp. 345-364, 2006.
17. Kyriacou , E., **Pattichis, M.S.**, Christodoulou, C., Pattichis, C.S., Kakkos, S. Griffin, M., and Nicolaides, A., “Ultrasound imaging in the analysis of carotid plaque morphology for the assessment of stroke,” invited chapter in *Plaque Imaging: Pixel To Molecular*, IOS Press, Ed. J.S. Suri, C. Yuan, D.L. Wilson, and S. Laxminarayan,pp. 241-275, 2005.
18. Christodoulou, C., Pattichis, C.S., Kyriacou, E., **Pattichis, M.S.**, Pantziaris, M., and Nikolaides, A., “Ultrasound Imaging in the Assessment of Carotid Plaque Morphology,” invited chapterin *Medical Image Analysis Methods*, CRC Press, Ed. L. Costaridou, pp. 87-135, 2005.
19. Pattichis, C.S., Kyriacou, E., Voskarides, S., **Pattichis, M.S.**, Istepanian, R., and Schizas, C.N., “Wireless Telemedicine Systems: An Overview,” invited chapter in *Telemedicine in Practice*, En Plo Publishers, Greece, Ed. M.Perdikouri, P. Giovas, D. Papadogiannis, pp. 149-169, 2005.
20. Christodoulou, C., Kyriacou, E., **Pattichis, M.S.**, Pattichis, C.S., and Nicolaides, A., “A Comparative Study of Morphological and other Texture Features for the Characterization of Atherosclerotic Carotid Plaques,” *Computer Analysis of Images and Patterns, Lecture Notes in Computer Science (LNCS2756), 10th International Conference,* *CAIP 2003*, Ed. by N. Petkov, and M. Westenberg, Springer Verlag, Groningen, The Netherlands, pp. 503-511, August 25-27, 2003.
21. **Pattichis, M.S.** and Bovik, A.C., “Latent Fingerprint Analysis using an AM-FM Model*,*” invited chapter in *Automatic Fingerprint Recognition Systems*, Springer Verlag, pp. 317-338, 2003.
22. **Pattichis, M.S.**, Havlicek, J.P., Acton, S.T., and Bovik, A.C., “Multidimensional AM-FM models with image processing applications,” pp. 277-306, in *Advances in Image* *Processing and Understanding: A Festschrift for Thomas S Huang*, Singapore: World Scientific Publishing, 2002.
23. Pattichis, C.S., Schnorrenberg, F., Schizas, C.N., **Pattichis, M.S.** and Kyriacou, K., “A Modular Neural Network System for the Analysis of Nuclei in Histopathological Sections,” chapter in *Computational Intelligence Processing in Medical Diagnosis*, Ed. L.C. Jain, Physica-Verlag, pp. 291-322, 2002.
24. Pattichis, C.S., Christodoulou, C., **Pattichis, M.S.**, and Middleton, L.T., “MUAP Signal Processing with Artificial NeuralNetworks,” chapter in *Recent Advances in Clinical Neurophysiology*, Ed. J. Kimura and H. Shibasaki, Elseviewer Science B. V., pp. 373-377, 1996.

**Conference papers**

1. Antoniou, Z.C, Panayides, A.S., Pantziaris, M., Constantinides, A.G., Pattichis, C.S., and **Pattichis, M.S.**, “Dynamic Network Adaptation For Real-Time Medical Video Communication,” accepted, *XIV,* in *Proc. of XIV Mediterranean Conference on Medical and Biological Engineering and Computing, Medicon’16*, Springer International Publishing, Paphos, Cyprus, 31st Mar.-02 Apr., pp. 1093-1098, 2016.
2. Esakki, G., Jatla, V., and **Pattichis, M.S.**, “Optimal HEVC Encoding Based on GOP

Configurations,” *IEEE Southwest Symposium on Image Analysis and Interpretation*, Santa Fe, New Mexico, pp. 25-28, 2016.

1. LopezLeiva, C., Celedon-Pattichis, S., and **Pattichis, M.S.**, “Integrating mathematics, engineering and technology through mathematics modeling and video representations,” accepted, *13th International Congress on Mathematical Education,* Hamburg, Germany, 2016.
2. Murray, V., Rodriguez, P., Noriega, M., Dasso, A. and **Pattichis, M.S.**, “2D Amplitude-Modulation Frequency-Modulation - based Method for Motion Estimation,” 6th IEEE Latin American Symposium on Circuits and Systems (LASCAS), 4 pages, 2015.
3. Jiang, Y., Zong, C., **Pattichis, M.S.**, “Scalable HEVC Intra Frame Complexity Control Subject to Quality and Bitrate Constraints,” invited, *3rd IEEE Global Conference on Signal & Information Processing*, Orlando, Florida, pp. 290-294, 2015.
4. Kyriacou, E., Vogazianos, P., Christodoulou, C., Loizou, C., Petroudi, S., **Pattichis, M.S.**, Pantziaris, M., Nicolaides, A., Pattichis, C., and Panayides, A., “Prediction of the Time Period of Stroke Based on Ultrasound Image Analysis of Initially Asymptomatic Carotid Plaques,” pp. 334-337, EMBC 2015.
5. Antoniou, Z., Stavrou, S., Panayides, A.S., Kyriacou, E., Constantinides, A., **Pattichis, M.S.**, Spanias, A., and Pattichis, C.S., “Adaptive Emergency Scenery Video Communications using HEVC for Responsive Decision Support in Disaster Incidents,” pp. 173-176, IEEE EMBC 2015.
6. Petroudi, S., Constantinou, I., **Pattichis, M.S.**, Tziakouri, C., Marias, K., and Pattichis, C.S., “Evaluation of Spatial Dependence Matrices on Multiscale Instantaneous Amplitude for Mammogram Classification,” *6th European Conference of the International Federation of Medical and Biological Engineering* (MBEC 2014), pp. 156-159, 2015.
7. Murray, V., Rodriguez, P., and **Pattichis, M.S.**, “2D Instantaneous Frequency-based Method for Motion Estimation using Total Variation,” *IEEE GlobalSIP,* pp. 1009-1013, Dec. 3-5, 2014.
8. Panayides, A., Constantinides, A., Kyriacou, E., **Pattichis, M.S.**, and Pattichis, C.S., “Adaptive Real-time HEVC Encoding of Emergency Scenery Video,” *4th International Conference on Wireless Mobile Communication and Healthcare*, MobiHealth 2014, p. 217, Nov. 3-5, 2014.
9. **Pattichis, M.S.**, Hock, R., Jatla, V., Henney, C., Arge, C., “Detecting Coronal Holes for Solar Activity Modeling,” *2014 Asilomar Conference on Signals, Systems, and Computers*, pp. 89-93, 2014.
10. Nguyen, C., Havlicek, J., Fan, G., Caulfield, J., and **Pattichis, M.S.**, “Robust Dual-Band MWIR/LWIR Infrared Target Tracking,” *2014 Asilomar Conference on Signals, Systems, and Computers*, pp. 78-83, 2014.
11. Panayides, A., **Pattichis, M.S.**, Spanias, A., Constantinides, A.G., and Pattichis, C.S., “Effective, Real-time Ultrasound Video Communications Over HSPA Networks Using Despeckle Filtering,” 1 page, *36th IEEE EMBC,* 2014.
12. Arbabshirani, M.R., **Pattichis, M.S.**, and Calhoun, V., “Detecting Volumetric Changes in fMRI Connectivity Networks in Schizophrenia Patients,” *36th IEEE EMBC,* pp. 726-729, 2014.
13. Ulloa, A., Rodriguez, P., Liu, J., Calhoun, V., and **Pattichis, M.S.**, “A Quasi-Local Method for Instantaneous Frequency Estimation with Application to Structural Magnetic Resonance Images,” *36th IEEE EMBC*, pp. 1477-1480, 2014.
14. Ulloa, A., Liu, J., Vergara, V.M., Chen, J., Calhoun, V., and **Pattichis, M.S.**, “Three-Way Parallel Independent Component Analysis for Imaging Genetics Using Multi-Objective Optimization,” *36th IEEE EMBC,* pp. 6651-6654, 2014.
15. Constantinou, I., **Pattichis, M.S.**, Tziakouri, C., Pattichis, C.S., and Petroudi, S., “AM-FM Multiscale Instantaneous Amplitude Evaluation for Mammographic Density Classification,” *Medical Image Understanding and Analysis* *(MIUA),* pp. 271-276, 2014*.*
16. Carranza, C., Llamocca, D., and **Pattichis, M.S.**, “A Scalable Architecture For Implementing The Fast Discrete Periodic Radon Transform For Prime Sized Images,” *2014 IEEE International Conference on Image Processing*, Paris, France, pp. 1208-1212, 2014.
17. Jiang, Y., Llamocca, D., **Pattichis, M.S.**, and Esakki, G., “A Unified and Pipelined Hardware Architecture for Implementing Intra Prediction in HEVC,” *2014 IEEE Southwest Symposium on Image Analysis and Interpretation,*” San Diego, California, April, pp. 29-32, 2014.
18. Carranza, C., Llamocca, D., and **Pattichis, M.S.**, “The Fast Discrete Periodic Radon Transform for prime sized images: Algorithm, architecture, and VLSI/FPGA implementation,” *2014 IEEE Southwest Symposium on Image Analysis and Interpretation,*” San Diego, California, April, pp. 169-172, 2014.
19. Panayides, A., **Pattichis, M.S.,** and Pattichis, C.S., “High Efficiency Video Coding (HEVC) for Reproducible Medical Ultrasound Video Diagnosis,” *2013 Asilomar Conference on Signals, Systems, and Computers,* (invited), 1117-1121, 2013.
20. Jiang, Y, Esakki, G., and **Pattichis, M.S.**, “Dynamically Reconfigurable Architecture System for Time-varying Image Constraints (DRASTIC) for HEVC intra encoding,” *Asilomar Conference on Signals, Systems, and Computers,* (invited), pp. 1112-1116, 2013.
21. Jiang, Y. and **Pattichis, M.S.**, “A Dynamically Reconfigurable Deblocking Filter for H.264/AVC Codec,” *2012 Asilomar Conference on Signals, Systems, and Computers,* (invited), pp. 2189-2193, 2013.
22. Constantinou, I.P., **Pattichis, M.S.,** and Pattichis, C.S., “Multiscale AM-FM Image Reconstructions Based on Elastic Net Regression and Gabor Filterbanks,” *2013 Asilomar Conference on Signals, Systems, and Computers,* pp. 1985-1989, 2013.
23. Constantinou, I., Neofytou, M., **Pattichis, M.S.**, and Pattichis, C.S., “A Comparison of Color Correction Algorithms for Endoscopic Cameras,” *13th IEEE International Conference on BioInformatics and BioEngineering (BIBE)*, 4 pages, 2013.
24. Petroudi, S., Constantinou, I., Tziakouri, C., **Pattichis, M.S.**, and Pattichis, C.S., “Investigation of AM-FM Methods for Mammographic Breast Density Classification,” *13th IEEE International Conference on BioInformatics and BioEngineering (BIBE)*, 4 pages, Nov. 2013.
25. Panayides, A., **Pattichis,** **M.S.,** Constantinides, C.G., and Pattichis, C.S., “M-Health Medical Video Communication Systems: An Overview of Design Approaches and Recent Advances,” *IEEE EMBC 2013*, pp. 7253-7256, 2013.
26. Panayides, A., Loizou, C.P., **Pattichis, M.S.**, Kyriacou, E., Schizas, C.N., and Pattichis, C.S., “Ultrasound Video Despeckle Filtering for High-Efficiency Video Compression for M-Health Systems,” *2013 CIWSP Workshop (in honor of the 70th birthday of Prof. Constantinides)*, 4 pages, 2013.
27. Constantinou, I., **Pattichis, M.S.**, Tanos, V., Neofytou, M., and Pattichis, C.S., “An Adaptive Multiscale AM-FM Texture Analysis System with Application to Hysteroscopy Imaging,” *2012 IEEE 12th International Conference Bioinformatics and Bioengineering (BIBE)*, pp. 744-747, 2012.
28. Jiang, Y., Perez, T., **Pattichis, M.S.**, and Khan, B., “A Configurable System for Role-Specific Video Imaging During Laparoscopic Surgery,” *2012 IEEE 12th International Conference Bioinformatics and Bioengineering (BIBE)*, pp. 738-743, 2012.
29. Nasrabadi, H., **Pattichis, M.S.**, Nicolaides, A.N., Griffin, M., Makris, G.C., Fisher, P., Kyriacou, E., and Pattichis, C.S., “Measurement of Motion of Carotid Bifurcation Plaques,” *2012 IEEE 12th International Conference Bioinformatics and Bioengineering (BIBE)*, pp. 506-511, 2012.
30. Panayides, A., Antoniou, Z., **Pattichis, M.S.**, and Pattichis, C.S., “The Use of H.264/AVC and the Emerging High Efficiency Video Coding Standard for Developing Wireless Ultrasound Video Telemedicine Systems,” *2012 Asilomar Conference on Signals, Systems, and Computers,* (invited), pp. 337-341, 2012.
31. Panayides, A., Antoniou, Z., **Pattichis, M.S.**, Pattichis, C. S., and Constantinides, A. G., “High Efficiency Video Coding for Ultrasound Video Communication in M-Health Systems,” *2012 IEEE EMBC*, pp. 2170-2173, 2012.
32. Agurto, C., Yu, H., Murray, V., **Pattichis, M.S.**, Barriga, S., Bauman, W., and Soliz, P., “Detection of Neovascularization in the Optic Disc Using an AM-FM Representation, Granulometry, and Vessel Segmentation,” *2012 IEEE EMBC*, pp. 4946-4949, 2012.
33. Llamocca, D., Carranza, C., and **Pattichis, M.S.**, “Dynamic Multiobjective Optimization Management of the Energy-Performance-Accuracy Space for 2-D Complex Filters,” *22nd IEEE International Conference on Field Programmable Logic and Applications (FPL)*, pp. 579-582, 2012.
34. Llamocca, D., **Pattichis, M.S.**, and Carranza, C., “A Framework for Self-Reconfigurable DCTs based on Multiobjective Optimization of the Power-Performance-Accuracy Space,” *2012 7th International Workshop on Ccommunication-centric Systems-on-Chip (ReCoSoC),* pp. 1-6, 2012.
35. Murray, V., Agurto, C., Barriga, S., **Pattichis, M.S.**, and Soliz, P., “Real-time Diabetic Retinopathy Patient Screening Using Multiscale AM-FM Methods,” accepted in

*2012 IEEE International Conference on Image Processing*, in press, 2012.

1. Jiang, Y. and **Pattichis, M.S.**, “Dynamically Reconfigurable DCT Architectures Based on Bitrate, Power, and Image Quality Considerations,” *2012 IEEE International Conference on Image Processing*, in press, 2012.
2. Carranza, C., Murray, V., **Pattichis, M.S.**, and E. Simon Barriga, E.S., “Multiscale AM-FM Decompositions with GPU acceleration for Diabetic Retinopathy Screening,” *2012 IEEE Southwest Symposium on Image Analysis and Interpretation,*” Santa Fe, New Mexico, pp. 121-124, 2012.
3. Agurto, C., Honggang Yu, H., Murray, V., **Pattichis, M.S.**, Barriga, S., and Soliz, P.,

“Detection of Hard Exudates and Red Lesions in the Macula Using a Multiscale

Approach,” *2012 IEEE Southwest Symposium on Image Analysis and Interpretation,*” Santa Fe, New Mexico, pp. 13-16, 2012.

1. Jiang, Y. and **Pattichis, M.S.**, “Dynamically Reconfigurable DCT Architecture for Maximum Image Quality Subject to Dynamic Power and Bitrate Constraints,” *2012 IEEE Southwest Symposium on Image Analysis and Interpretation,*” Santa Fe, New Mexico, pp. 189-192, 2012.
2. Panayides, A., Antoniou, Z., Varveris, V., **Pattichis, M.S.**, Pattichis, C.S., and Kyriacou, E., “Abdominal Aortic Aneurysm Medical Video Transmission,” *IEEE-EMBS International Conference on Biomedical and Health Informatics*, Hong Kong, Shenzen, pp. 679-682, Jan. 2012.
3. Murillo, S., Murray, V., Loizou, C.P., Pattichis, C.S., **Pattichis, M.S.,** and Barriga, S., “Motion and deformation analysis of ultrasound videos with applications to classification of carotid artery plaques,” in *SPIE Medical Imaging, SPIE DOI:10.1117/12.910981*,Feb. 2012.
4. Jiang, Y., and **Pattichis, M.S.**, ”JPEG Image Compression Using Quantization Table Optimization Based on Perceptual Image Quality Assessment,” *Proc. 45th Asilomar Conference on Signals, Systems and Computers*, Nov. 2011, Asilomar, Pacific Grove, California, pp. 225-229, 2011.
5. Murray, V.M., **Pattichis, M.S.**, and Soliz, P., "Multiscale Directional AM-FM Demodulation of Images Using a 2D Optimized Method," *IEEE International Conference on Image Processing (ICIP)*, pp. 249-252, 2011.
6. Petroudi, S., Loizou, C.P., **Pattichis, M.S.**, Pattichis, C.S., “A Fully Automated Method Using Active Contours for the Evaluation of the Intima-Media Thickness in Carotid US Images,” *33rd Annual Conference of the IEEE Engineering in Medicine and Biology Society, IEEE EMBC’11*, pp. 8053-8057, 2011.
7. Kyriacou, E., Nicolaides, A., Pattichis, C.S., **Pattichis, M.S.**, Griffin, M., Kakkos, S., and Makris, G., “First and Second Order Statistical Texture Feature in Carotid Plaque Image Analysis: Preliminary Results from Ongoing Research,” *33rd Annual Conference of the IEEE Engineering in Medicine and Biology Society, IEEE EMBC’11*, pp. 6655-6658, 2011.
8. Kyriacou, E., Constantinides, P., Pattichis, C.S., **Pattichis, M.S.**, and Panayides, A., “eEmergency Health care Information Systems,” *33rd Annual Conference of the IEEE Engineering in Medicine and Biology Society, IEEE EMBC’11*, pp. 2501-2504, 2011.
9. Llamocca, D., Carranza, C., and **Pattichis, M.S.**, “Separable FIR Filtering in FPGA and GPU Implementations: Energy, Performance, and Precision Considerations,” *21st Conference on Field Programmable Logic and Applications (FPL 2011),* Chania, Crete, Greece, pp. 363-368, 2011.
10. Murray, V.M., Llamocca, D., Jiang, Y., Lyke, J., **Pattichis, M.S.**, Achramowicz, S., and Avery, K., "Cell-based Architecture for Adaptive Wiring Panels: A First Approach,"*RS 2011 Reinventing Space Conference*, 2011.
11. Agurto Rios, C.P., Barriga, S., Murray, V.M., Murillo, S., **Pattichis, M.S.**, Zamora, G., Bauman, W.C., and Soliz, P., “Toward comprehensive detection of sight threatening retinal disease using a multiscale AM-FM methodology,” *SPIE Medical Imaging*, 12 pages, February, 2011.
12. Yu, H., Barriga, S., Agurto Rios, C.P. Echegaray, E., **Pattichis, M.S.**, Zamora, G., Bauman, W.C., and Peter Soliz, P., Fast localization of optic disc and fovea in retinal images for eye disease screening, *SPIE Medical Imaging*, 12 pages, February, 2011.
13. Loizou, C.P., Murray, V., **Pattichis, M.S.**, Pantziaris, M., Seimenis, I., and Pattichis, C.S., "AM-FM Texture Image Analysis in Multiple Sclerosis Brain White Matter Lesions", *Proc. of IFMBE*, vol. 29, pp. 446-449, 2010.
14. Christodoulou, C.I., Kaplanis, P.A., Murray, V., **Pattichis, M.S.**, and Pattichis, C.S., "Comparison of AM-FM Features with Standard Features for the Classification of Surface Electromyographic Signals," *XII Mediterranean Conference on Medical and Biological Engineering and Computing*, pp. 69-72, 2010.
15. Llamocca, D., and **Pattichis, M.S.**, "Real-time dynamically reconfigurable 2-D filterbanks, *Proc. IEEE Southwest Symposium on Image Analysis and Interpretation*, pp. 181-184, 2010
16. Loizou, C.P., Murray, V., **Pattichis, M.S.**, Pantziaris, M., and Pattichis, C.S., "AM-FM Texture Image Analysis in Brain White Matter Lesions in the Progression of Multiple Sclerosis", *Proc. IEEE Southwest Symposium on Image Analysis and Interpretation*, pp. 61-64, 2010
17. Rodriguez, P., Murray, V., and Pattichis, M.S., “A Regularized Optimization Approach for AM-FM Reconstructions,” *Proc. Asilomar Conference on Signals, Systems and Computers*, pp. 219-221, Nov. 2010.
18. Lambrou, A., Papadopoulos, H., Kyriacou, E.C., Pattichis, C.S., **Pattichis, M.S.**, Gammerman, A., and Nicolaides, A.N., "Assesment of Stroke Risk Based on Morphological Ultrasound Image Analysis With Conformal Prediction", *Proc. 6th IFIP Conference on Artificial Intelligence Applications and Innovations*, AIAI 2010, pp. 146-153, Larnaca Cyprus, 6-7 Oct. 2010 (invited to special issue).
19. Panayides, A., **Pattichis, M.S.**, Pattichis, C.S., Schizas, C.N., Spanias, A., and Kyriacou, E., “An Overview of Recent End-to-End Wireless Medical Video Telemedicine Systems using 3G,” in *Proc. of 32nd Annual Conference of the IEEE Engineering in Medicine and Biology Society, IEEE EMBC’10*, Buenos Aires, Argentina, pp. 1045-1048, August 2010, PMID 21097209.
20. Murray, V., Feucht, G.A., Lyke, J.C., **Pattichis, M.S.**, and Plusquellic, J., “Cell-based Architecture for Reconfigurable Wiring Manifolds,” *American Institute of Aeronautics and Astronautics Conference: AIAA Infotech@Aerospace 2010*, Atlanta, Georgia, April 2010.
21. Llamocca, D., **Pattichis, M.S.**, Vera, G.A., and Lyke, J.C., “Dynamic Partial Configuration through Ethernet Link,” *American Institute of Aeronautics and Astronautics Conference: AIAA Infotech@Aerospace 2010*, Atlanta, Georgia, April 2010.
22. Barriga, E.S., Murray, V., Agurto, C., **Pattichis, M.S.**, Bauman, W., Zamora, G., and Soliz, P.,

“Automatic System for Diabetic Retinopathy Screening Based on AM-FM, Partial Least Squares, and Support Vector Machines,” *IEEE International Symposium on Biomedical Imaging*, pp. 1349-1352, 2010.

1. Soliz, P., Davis, B., Murray, V., **Pattichis, M.**, Barriga, S., and Russell, S., “Toward Automatic Phenotyping of Retinal Images from Genetically Determined Mono and Dizygotic Twins Using Amplitude-Modulation Frequency-Modulation Methods,” 12 pages, *SPIE Medical Imaging,* San Diego, California, Feb. 2010.
2. Murillo, S., **Pattichis, M.**, Soliz, P., Loizou, C.P., and Pattichis, C.S., “Global Optimization for Motion Estimation with Applications to Ultrasound Videos of Carotid Artery Plaques,” *Proc. SPIE Medical Imaging,* 12 pages, San Diego, California, Feb. 2010.
3. Agurto, C., Barriga, S., Murray, V., **Pattichis, M.**, Davis, B., and Soliz, P., ”Effects of Image Compression and Degradation on an Automated Diabetic Retinopathy Screening Algorithm,” *Proc. SPIE Medical Imaging: Computer-Aided Diagnosis*, vol. 7624, pp. 76240H-1 – 7620H-9, 12 pages, San Diego, California, Feb. 2010.
4. Panayides A., **Pattichis, M.S.**, and Pattichis, C.S., “Wireless Ultrasound Video Transmission for Stroke Risk Assessment: Quality Metrics and System Design,” *International Workshop on Video Processing and Quality Metrics for Consumer Electronics*, (VPQM 2010), 6 pages, Scottsdale, Arizona, Jan. 2010.
5. Llammocca, D., **Pattichis, M.S.**, and Vera, A., “A Dynamically Reconfigurable Platform for Fixed-Point Filters,” *2009 International Conference on ReConFigurable Computing and* FPGAs,” (ReConFig’09), pp. 332-337 (***invited for journal submission***), Cancun, Mexico, December 9-11, 2009.
6. **Pattichis, M.S.**, Murray, V., “AM-FM Analysis over Spatially Bounded Domains with Applications in Medical Imaging,” *9th International Conference on Information Technology and Applications in Biomedicine (ITAB’2009)*, Larnaca, Cyprus, Nov. 5-7, 2009.
7. Christodoulou, C.I., Kaplanis, P.A., Murray, V., **Pattichis, M.S.**, and Pattichis, C.S., “Classification of Surface Electromyographic Signals using AM-FM Features,” *9th International Conference on Information Technology and Applications in Biomedicine (ITAB’2009)*, Larnaca, Cyprus, pp. 1-4, Nov. 5-7, 2009.
8. Murray, V., Barriga, E.S., Soliz, P., and **Pattichis, M.S.**, “Survey of AM-FM methods for Applications on Medical Imaging,” accepted, *2009 Ibero-American Conference on Trends in Engineering Education and Collaboration* (CITECI), Albuquerque, NM, Oct., 2009.
9. Llammocca, D., **Pattichis, M.S.**, and Vera, A., “A Dynamically Reconfigurable Parallel Pixel Processing System,” *19th IEEE International Conference on Field Programmable Logic*, (FPL 09), Czech Republic, pp. 462-466, 2009.
10. **Pattichis, M.S.**, “Multidimensional AM-FM Models and Methods for Biomedical Image Computing,” invited, *34th IEEE Annual International Conference of the Engineering in Medicine and Biology Society*, pp. 5641-5644, Sept. 2-6, 2009.
11. Kyriakou, E., Pattichis, C.S. and **Pattichis, M.S.**, “An Overview of Recent Health Care Support Systems for eEmergency and mHealth Applications,” invited to *34th IEEE Annual International Conference of the Engineering in Medicine and Biology Society,* pp. 1246-1249, Sept. 2-6, 2009.
12. Panayides, A., **Pattichis, M.S.**, Pattichis, C.S., Loizou, C.P., and Pitsillides, A., “Robust and Efficient Ultrasound Video Coding in Noisy Channels Using H.264,” *34th IEEE Annual International Conference of the Engineering in Medicine and Biology Society,* pp. 5143-5146, Sept. 2-6, 2009, PMID: 19964858.
13. Vera, A., Llamocca, D., **Pattichis, M.S.** and Lyke, J., “A Dynamically Reconfigurable Computing Model for Video Processing Applications,” invited in *Proc. 43rd* *Asilomar Conference on Signals, Systems and Computers*, pp. 327-331, Nov. 1st-4th, 2009.
14. Jeromin, O.M., and **Pattichis, M.S.**, “Reconstruction of Aerial Image from Fourier Spectral Samples Using Statistical Models,” invited in *Proc. 43rd Asilomar Conference on* *Signals, Systems and Computers*, pp. 1397-1401, Nov. 1st-4th, 2009.
15. Murray, V., **Pattichis, M.S.**, and Soliz, P., “Retrieval and Classification of PneumoconiosisImages Using Multi-scale AM-FM Methods,” invited in *Proc. 43rd Asilomar Conference on Signals, Systems and Computers*, pp. 746-750, Nov. 1st-4th, 2009.
16. Llamocca, D., Vera, A., and **Pattichis, M.S.**, “A Dynamic Computing Platform for Image and Video Processing Applications,” invited in *Proc. 42nd Asilomar Conference on* *Signals, Systems and Computers*, pp. 412-416, Nov. 1st-4th, 2009.
17. Ramamurthy, K., Spanias, A., Hinnov, L., Akujuobi, C., Stiber, M., **Pattichis, M.**, Doering, E., Pattichis, C., Thornburg, H., Papandreou-Suppappola, A., Spanias, P., Ayyanar, R., Campana, E., and Haag, S., “Work in Progress – Collaborative Multi-Disciplinary J-DSP Software Project,” *39th ASEE/IEEE Frontiers in Education Conference,* pp. 1-2, Oct. 18-21, San-Antonio, Texas, 2009.
18. Barriga, E.S., Murray, V., Agurto, C., **Pattichis, M.S.**, Russell, S., Abramoff, M.D., Davis, H. and Soliz, P., “Multi-Scale AM-FM for lesion Phenotyping on Age Related Macular Degeneration,” *22nd IEEE Symposium on Computer-Based Medical Systems,* pp. 1-5, Albuquerque, New Mexico, 2009.
19. Kyriacou, E., Pattichis, C.S., Jossif, A., **Pattichis, M.S.**, Paraskeva, L., Hoplaros, D., Kounoudes, A. and Vogiatzis, D., “A Wireless System for Monitoring of Children with Suspected Cardiac Arrhythmias,” accepted in the *2nd International Conference on PErvasive Technologies Related to Assistive Environments* (*PETRA’09*), 6 pages, Corfu, Greece, June 9-13, 2009.
20. Loizou, C.P., Murray, V., **Pattichis, M.S.**, Pantziaris, M., Nicolaides, A.N. and Pattichis, C.S., “AM-FM Texture Image Analysis and Retrieval of the Intima and Media Layers of the Carotid Artery,” accepted, *19th International Conference on Artificial Neural Networks*, Limassol, Cyprus, 2009.
21. Murray, V., **Pattichis, M.S.**, Davis, H., Barriga, E. and Soliz, P., “Multiscale AM-FM Analysis of Pneumoconiosis X-ray Images,” *IEEE Int. Conf. on Image Processing,* pp. 4201-4204, Cairo, Egypt, 2009.
22. Christodoulou, C.I., Pattichis, C.S., Murray, V., **Pattichis, M.S.** and Nicolaides, A, “AM-FM Representation for the Characterization of Carotid Plaque Ultrasound Images,” in *Proc. 4th European Congress of the International Federation for Medical and Biological Engineering*, Antwerp, Belgium, pp. 546-549, Nov. 23-27, 2008.
23. Kyriacou, E., Pattichis, C., **Pattichis, M.S.**, Jossif, A., Vogiatzis, D., Paraskeva, L. and Konstantinides A., “An M-heath System for Continuous Monitoring of Children with Suspected Cardiac Arrhythmias,” in *Proc. 4th European Congress of the International Federation for* *Medical and Biological Engineering*, Antwerp, Belgium, pp. 1325-1328, Nov. 23-27, 2008.
24. Neofytou, M.S., Loizou, A., Pattichis, C.S., **Pattichis, M.S.** and Tanos, V., “Classification and Data Mining for Hysteroscopy Imaging in Gynaecology,” in *Proc. 4th European Congress of the International Federation for Medical and Biological Engineering*, Antwerp, Belgium, pp. 918-922, Nov. 23-27, 2008.
25. Jeromin, O.M., Calhoun, V.D. and **Pattichis, M.S.**, “Optimal Sampling Geometries for TV-Norm Reconstruction of fMRI Data,” invited in *Proc. 42nd Asilomar Conference on* *Signals, Systems and Computers*, pp. 1397-1401, Oct. 26-29, 2008.
26. Murray, V., **Pattichis, M.S.** and Soliz, P., “Analysis Methods for Retinal Image Characterization,” invited in *Proc. 42nd Asilomar Conference on Signals, Systems and* *Computers*, pp. 664-668, Oct. 26-29, 2008.
27. Agurto, C, Murillo, S., Murray, V., **Pattichis, M.S.**, Russell, S., Abramoff, M. and Soliz, P., “Detection and Phenotyping of Retinal Disease using AM-FM Processing for Feature Extraction,” invited in *Proc. 42nd Asilomar Conference on Signals, Systems and Computers*, pp. 659-663, Oct. 26-29, 2008.
28. Loizou, C.P., Pantziaris, M., Nicolaides A., Spanias, A., **Pattichis, M.S.** and Pattichis, C.S., “Ultrasound Imaging Media Layer Texture Analysis of the Carotid Artery,” in *CD-ROM Proc.* *of the 8th IEEE International Conference on BioInformatics and BioEngineering* (BIBE 2008), Athens, Greece, pp. 1-6, Oct. 8-10, 2008.
29. Neofytou, M.S., Pattichis, C.S., **Pattichis, M.S.**, Tanos, V., Kyriacou, E.C. and Schizas, C., “Color Multiscale Texture Classification of Hysteroscopy Images of the Endometrium,” in *Proc. of 30th Annual International conference of the IEEE engineering in Medicine and Biology Society*, (EMBS 2008), Vancouver, Canada, pp. 1226-1229, Aug. 20-24th, 2008 **(selected for Poster and Display Presentation)**.
30. Panayides, A., **Pattichis, M.S.** and Pattichis C.S., “Wireless Medical Ultrasound Video Transmission Through Noisy Channels,” in *Proc. of 30th Annual International conference of the IEEE engineering in Medicine and Biology Society*, 20-24 August, Vancouver, Canada, pp. 5326-5329, Aug. 20-25th, 2008, PMID: 19163920.
31. Kyriacou, E., Kounnoudes, T., Paraskeva, L., Konstantinides, A., Pattichis, C., Jossif, A., **Pattichis, M.S.** and Vogiatzis, D., “Continuous Monitoring of Children with Suspected Cardiac Arrhythmias,” *in Proc. of eHealth 2008*, City University, London, 8 pages, Sept. 8-9th, 2008.
32. Acton, S.T., Soliz, P., Russell, S. and **Pattichis, M.S.**, “Content Based Image Retrieval: The Foundation for Future Case-Based And Evidence-based Ophthalmology,” in *Proc. IEEE* *International Conference on Multimedia & Expo*, Hannover, Germany, pp. 541-544, Jun. 23-26, 2008.
33. Meyer-Bäse, Uwe, Vera, A., Meyer-Bäse, A., **Pattichis, M.S.** and Perry, R., “DSP with FPGAs: a Xilinx/Simulink-based course and laboratory”, in *Proc of the SPIE. Independent* *Component Analyses, Wavelets, Unsupervised Nano-Biomimetic Sensors, and Neural Networks VI.* Edited by Szu, Harold H.; Agee, F. Jack., vol. 6979, pp. 697907-697907-12, May, 2008.
34. Murray, V. and **Pattichis, M.S.**, “AM-FM Demodulation Methods for Reconstruction, Analysis and Motion Estimation in Video signals,” *2008 IEEE Southwest Symposium on Image* *Analysis,* *and Interpretation*, Santa Fe, New Mexico, pp. 17-20, Mar., 2008.
35. Soliz, P., Russell, S.R., Abramoff, M.D., Murillo, S., **Pattichis, M.** and Davis, H., “Independent Component Analysis for Vision-inspired Classification of Retinal Images with Age-related Macular Degeneration,” *2008 IEEE Southwest Symposium on Image Analysis,* *and* *Interpretation*, Santa Fe, New Mexico, pp. 65-68, Mar. 2008.
36. Pattichis, C.S., Kyriacou, E.C., **Pattichis, M.S.**, Panayides, A., Mougiakakou, S., Pitsillides, A. and Schizas, C.N., “A Brief Overview of m-Health e-Emergency Systems,” in *CD-ROM Proc. of the 6th International IEEE EMBS Special Topic Conference on Information Technology Application in Biomedicine,* (ITAB-2007), Tokyo, Japan, pp. 53-57, Nov. 8-11, 2007.
37. Murray, V., Murillo, S.E., **Pattichis, M.S.**, Loizou, C.P., Pattichis, C.S., Kyriacou, E. and Nicolaides, A., “An AM-FM model for Motion Estimation in Atherosclerotic Plaque Videos,” invited in the *41st Asilomar Conference on Signals, Systems, and Computers*, Asilomar Hotel and Conference Grounds, Pacific Grove, CA, pp. 746-750, Nov. 4-7, 2007.
38. Murray, V., Rodriguez, P.V. and **Pattichis, M.S.**, “Robust Multiscale AM-FM Demodulation of Digital Images,” in *Proc.* *2007 IEEE International Conference on Image Processing* (ICIP-2007), San Antonio, Texas, pp. I-465 - I-468, Sept. 16-19, 2007.
39. Kyriacou, E., Pattichis, C., **Pattichis, M.**, Jossif, A., Paraskeva, L., Konstantinides, A. and Vogiatzis, D., “An m-Health Monitoring System for Children with Suspected Arrhythmias,” in *Proc. of the 29th Annual Intern. Conf. of the IEEE Engineering In Medicine and Biology Society,* (EMBS 2007), Lyon, France, pp. 1794-1797, Aug. 22-26, 2007.
40. Neofytou, M.S., Tanos, V., **Pattichis, M.S.**, Pattichis, C.S., Kyriacou, E.C. and Pavlopoulos, S., “Color Based Texture – Classification of Hysteroscopy Images of the Endometrium,” in *Proc. of the 29th Annual Intern. Conf. of the IEEE Engineering In Medicine and Biology* *Society,* (EMBS 2007), Lyon, France, pp. 864-867, Aug. 22-26, 2007.
41. Vera, A., Lllamocca, D., **Pattichis, M.**, Kemp, W., Shedd, W, Alexander, D. and Lyke, J., “Dose Rate Upset Investigations on the Xilinx Virtex IV Field Programmable Gate Arrays,” in *Proc. 2007 IEEE Radiation Effects Data Workshop*, pp. 172-176, July, 2007.
42. Barriga, E.S., **Pattichis, M.S.**, Abramoff, M., T’so, D., Kwon, Y., Kardon, R and Soliz, P., “Independent component analysis for the detection of in-vivo intrinsic signals from an optical imager of retinal function,” *in Proc. of Photonics West 2007*, San Jose, California, 12 pages, Jan., 2007.
43. Vera, G.A., Meyer-Baese, U., and **Pattichis, M.S.**, “An FPGA-based Rapid Prototyping Platform for Wavelet Coprocessors,” *in Proc. of SPIE Defense & Security Symposium,* Orlando, Florida, vol. 6576, pp. 657615-1 - 657615-10, Apr., 2007.
44. Meyer-Baese, U., Vera, A., Meyer-Baese, A., **Pattichis, M.S.** and Perry, R., “Smart Altera Firmware for DSP with FPGAs,” *in Proc. of SPIE Defense & Security Symposium,* Orlando, Florida, vol. 6576, pp. 65760T-1 – 65760T-11, Apr., 2007.
45. Meyer-Baese, U., Vera, G.A., Rao, S., Lenk, K. and **Pattichis, M.S.**, “FPGA Wavelet Processor Design using Language for Instruction-set Architectures (LISA),” *in Proc. of SPIE Defense & Security Symposium,* Orlando, Florida, vol. 6576, pp. 65760U-1 – 65760U-12, Apr., 2007.
46. Pattichis, C.S., Kyriacou, E., **Pattichis, M.S.**, Panayides, A., and Pitsillides, A., “A Review of m-Health e-Emergency Systems,” in *CD-ROM Proc. of the 5th International IEEE EMBS* *Special Topic Conference on Information Technology in Biomedicine*, Ioannina, Greece, 6 pages, Oct., 2006.
47. Murillo, S.E., **Pattichis, M.S.**, Loizou, C., Pattichis, C.S., Kyriacou, E., Constantinides, A.N., and Nicolaides, A., “Atherosclerotic Plaque Motion Trajectory Analysis from Ultrasound Videos”, in *CD-Rom Proc. of the 5th International IEEE EMBS Special Topic* *Conference on Information Technology in Biomedicine*, Ioannina, Greece, 5 pages, Oct., 2006.
48. Panayides, A., **Pattichis, M. S.**, Pattichis, C. S., and Pitsillides, A., “A Review of Error Resilience Techniques in Video Streaming, in *Proc. of* *ISYC 2006, International* *Conference On Intelligent Systems and Computing: Theory and Applications,* Ayia Napa, Cyprus, pp. 39-48, Jul., 2006.
49. Yu, H., **Pattichis, M.S.**, and Goens, M.B., ”Robust Segmentation and Volumetric Registration in a Multi-view 3D Freehand Ultrasound Reconstruction System,” invited to the *40th Asilomar Conference on Signals, Systems, and Computers*, Asilomar Hotel and Conference Grounds, Pacific Grove, CA, pp. 1978-1982, 2006.
50. Barriga, E., **Pattichis, M. S.**, Abramoff, M., Kardon, R., Kwon, Y., Ts’o D., and Soliz, P., “Spatiotemporal Independent Component Analysis for Retinal Images,” invited to the *40th Asilomar Conference on Signals, Systems, and Computers*, Asilomar Hotel and Conference Grounds, Pacific Grove, CA, pp. 1961-1965, 2006.
51. Murillo, S. E., **Pattichis, M. S.**, Loizou, C., Pattichis, C. S., Kyriacou, E., Constantinides, N., and Nicolaides, A., “Atherosclerotic Plaque Motion Analysis from Ultrasound Videos,” invited to the *40th Asilomar Conference on Signals, Systems, and Computers*, Asilomar Hotel and Conference Grounds, Pacific Grove, CA, pp. 836-840, 2006.
52. Cacoullos, T. and **Pattichis, M. S.**, “Pneumoconiosis Revisited: Classifiers Viewed via ROC Curves and Logic Functions,” 8 pages, published in *Proc. of the 2006 Panhellenic Conference on Statitistics.*
53. Yu, H., **Pattichis, M.S.**, and Goens, M.B., “Robust Segmentation of Freehand Ultrasound Image Slices using Gradient Vector Flow Fast Geometric Active Contours,” in *Proc. of 2006* *IEEE Southwest Symposium on Image Analysis and Interpretation*, Denver, Colorado, pp. 115-119, Mar. 26-28, 2006.
54. Vera, A., Parra, J., Kief, C., **Pattichis, M.**, and Pollard, H., “Integrating Reconfigurable Logic in the First Digital Logic Course,” 6 pages, in *CD-ROM Proc. of* *2006 ICEE* *Conference*,Puerto Rico, 2006.
55. Meyer-Baese, U., Vera, A., Meyer-Baese, A., **Pattichis, M.S.**, Perry, R., “Discrete Wavelet Transform FPGA Design using Matlab/Simulink,” in *Proc. of SPIE Independent Component* *Analysis, Wavelets, Unsupervised Smart Sensors, and Neural Networks IV,* Orlando, Florida, 10 pages, 2006.
56. Barriga, E.S., Ts’o, D.Y., **Pattichis, M.S.**, Kwon, Y.H., Kardon, R., Abramoff, M.D., and Soliz, P., “Detection of Low Amplitude, in-vivo Intrinsic Signals from an Optical Imager of Retinal Function,” *Proc. of* *SPIE Photonics West*, San Jose, California, vol. 6138, pp. 66-76, 2006 (**Finalist to the Pascal Rol award for best paper**).
57. Neofytou, M.S., **Pattichis, M.S.**, Pattichis, C.S., Tanos, V., Kyriacou, E.C., and Koutsouris D.D., “Texture-based Classification of Hysteroscopy Images of the Endometrium, in *Proc. of the 28th Annual International Conference of the IEEE Engineering in Medicine and Biology Society* (EMBS’ 06), New York, pp. 3005-3008, Aug., 2006.
58. Kyriacou, E., Pattichis, C.S., **Pattichis, M.S.**, Mavrommatis, A., Panagiotou, S., Christodoulou, C.I., Kakkos, S. and Nicolaides, A., “Classification of Atherosclerotic Carotid Plaques Using Gray Level Morphological Analysis on Ultrasound images”, *in Proc. of the 3rd* *IFIP* *Conference on Artificial Intelligence Applications and Innovations (AIAI06)*, Athens Greece, pp. 737-744, vol. 204, Jun. 7-9, Springer 2006 **(a best paper award, invited for Journal** **submission)**.
59. Jeromin, O., **Pattichis, M.S.**, Pattichis, C.S., Kyriacou, E., and Nicolaides, A., “Variogram Methods for Texture Classification,” in *Proc. of SPIE Medical Imaging*, San Diego, pp. 61440D-1 – 61440D-12, vol. 6144D, Feb., 2006.
60. Yu, H., **Pattichis, M.S.**, and Goens, M.B., “Multi-view 3D Reconstruction with Volumetric Registration in a Freehand Ultrasound Imaging System,” in *Proc*. *of SPIE* *Medical Imaging,* pp. 45-56, vol. 6147, Feb., 2006.
61. Cacoullos, T. and **Pattichis, M. S.**, “Classification Under a Multivariate Bernoulli: An Application to Pneumoconiosis”, in the *Proc. of the 2005 Panhellenic Conference on* *Statistics*, Rhodes, Greece, pp. 419-426, 2005*.*
62. Neophytou, M., Pattichis, C, Tanos, V., **Pattichis, M.**, Kyriacou, E., and Koutsouris, D., “The Effect of Color Correction of Endoscopy Images for Quantitative Analysis in Endometrium,” published in *Proc. of 27th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS)*, Shanghai, China, pp. 3336-3339, Sept. 1-4, 2005.
63. Kyriakou, E., **Pattichis, M.S.**, Christodoulou, C.I., Pattichis, C.S., Kakkos, S., and Nicolaides, A., “Multiscale Morphological Analysis of the Atherosclerotic Carotid Plaque,” published in *27th Annual International Conference of the IEEE Engineering in Medicine and* *Biology Society (EMBS)*, Shanghai, China, pp. 1626-1629, Sept. 1-4, 2005.
64. Yu, H., **Pattichis, M.S.**, and Goens, M.B., “A Robust Multi-view Freehand Three-dimensional Ultrasound Imaging System Using Volumetric Registration,” in *Proc.* *IEEE International Conference on Systems, Man and Cybernetics*, The Big Island, Hawaii, pp. 3106-3111, vol. 4, Oct. 10-12, 2005.
65. Rodriguez, P. V. and **Pattichis, M.S.**, “New Algorithms for Fast and Accurate AM-FM Demodulation of Digital Images,” *2005 IEEE International Conference on Image Processing (ICIP-2005)*, Genova, Italy, pp. 1294-1297, vol. 2, Sept. 11-14, 2005.
66. **Pattichis, M.S.**, Martin, G., and Pattichis, C.S., "A New Model for Image Variability due to the Scanning Process and its Effects on Texture Feature Analysis" (invited), published in CD-ROM proceedings of the *II Mediterranean Conference on Medical Physics:* *The Analog to Digital Migration of the Hospital Working Environment,* Limassol, Cyprus, 6 pages, Apr. 26-30, 2004.
67. Neophytou M.S., Pattichis C.S., **Pattichis M.S.**, Tanos V.,Kyriacou E.C., Koutsouris D., "Multiscale Texture Feature Variability Analysis in Endoscopy Imaging Under Different Viewing Positions" (invited), published in CD-ROM proceedings of the *II Mediterranean* *Conference on Medical Physics: The Analog to Digital Migration of the Hospital Working* *Environment,* Limassol, Cyprus, 6 pages, Apr. 26-30, 2004.
68. Neophytou, M.S., Pattichis, C.S., Pattichis, M.S., Tanos, V., Kyriacou, E.C., Pavlopoulos, S., and Koutsouris, D.D., "Texture Analysis of the Endometrium during Hysteroscopy: Preliminary Results,” *Proc.* *IEEE 26th International Conference of the IEEE Engineering in Medicine and Biology Society* (EMBS 2004), pp. 1483-1486, vol. 1, Sept., 2004.
69. Martin, G. and **Pattichis, M.S.**, "The Characterization of Scanning Noise and Quantization on Texture Feature Analysis" (invited), *Proc. 6th IEEE Southwest Symposium on Image* *Analysis and Interpretation*, Lake Tahoe, Nevada, pp. 152-156, Mar., 2004.
70. Rodriguez, P. V. and **Pattichis, M.S.**, "Nested Random Phase Sequence Sets: A Link between AM-FM Demodulation and Increasing Operators with Application to Cardiac Image Analysis" (invited), *Proc. IEEE Southwest Symposium on Image Analysis and* *Interpretation*, Lake Tahoe, Nevada, pp. 196-200, Mar., 2004.
71. Kern, J.P., **Pattichis, M.S.**, and Stearns, S.D., “Registration of Image Cubes Using Multivariate Mutual Information,” *Proc. 37th Asilomar Conference on Signals,* *Systems, and Computers*, Asilomar Hotel and Conference Grounds, Pacific Grove, CA, pp. 1645-1649, vol. 2, Nov., 2003.
72. Rodriguez, P. V., **Pattichis, M.S.**, and Goens, M.B., “M-mode Echocardiography Image and Video Segmentation based on AM-FM Demodulation Techniques,” *Proc. IEEE* *25thInternational Conference of the IEEE Engineering in Medicine and Biology Society* *(EMBS 2003)*, Cancun,Mexico, pp. 1176-1179, vol. 2, Sept., 2003.
73. Barriga, E.S., T’so, D.Y., **Pattichis, M.S.** and Soliz, P., “Independent Component Analysis for Processing of Retinal Responses to Patterned Stimuli,” *Proc. IEEE 25th International* *Conference of the IEEE Engineering in Medicine* *and Biology Society (EMBS 2003)*, Cancun, Mexico, pp. 1006-1009, vol. 1, Sept., 2003.
74. Ourique, F., Licks, V., Jordan, R., and **Pattichis, M.S.**, “Automatic Segmentation of Scanning Electron Microscopy Images for Molecular Aggregation Profiling,” *Proc. IEEE* *25th International Conference of the IEEE Engineering in Medicine* *and Biology Society* *(EMBS 2003)*, Cancun, Mexico, pp. 702-705, vol. 1, Sept., 2003.
75. Rodriguez, P., Jordan, R., **Pattichis, M.S.**, and Goens, M.B., “Fast AM-FM Demodulation Image and Video Analysis Using Single Instruction Multiple Data (SIMD) Architectures,” *Proc. IASTED International Conference on Signal Processing, Pattern Recognition and* *Applications, SPRA 2003*, Rhodes, Greece, pp. 230-233, Jun. 30 – Jul. 2, 2003.
76. Christodoulou, C.I., Kyriacou, E., **Pattichis, M.S.**, Pattichis, C.S., and Nicolaides, A., “A Comparative Study of Morphological and other Texture Features for the Characterization of Atherosclerotic Carotid Plaques,” *Proc. of the 10th* *International Conference on Computer Analysis of Images and Patterns*, Groningen, The Netherlands, pp. 503-511, Aug., 2003.
77. Barriga, E.S., Truitt, P.W., **Pattichis, M.S.**, T’so, D., Kwon, Y.H., Kardon, R.H., and Soliz, P., “Blind Source Separation in Retinal Videos,” *Proc. of the SPIE Medical Imaging* *Conference*, San Diego, California, pp. 1591-1601, vol. 5032, Feb., 2003.
78. Thurgood, M.J., Jordan, R., Abdallah, C.T., and **Pattichis, M.S.**, “Fast Algorithms for Generating the Original and Symmetric PONS Matrices,” presented in *10th Digital Signal* *Processing Workshop*, Pine Mountain, Georgia, Oct., 2002.
79. Christodoulou, C.I., Loizou, C., Pattichis, C.S., Pantziaris, M., Kyriakou, E., **Pattichis, M.S.**, Schizas, C.N., and Nicolaides, A., “De-speckle Filtering in Ultrasound Imaging of the Carotid Artery,” *IEEE 24th International Conference of the IEEE Engineering in Medicine* *and Biology Society (EMBS 2002)*, Houston, Texas, vol. 2, pp. 1027-1028,Oct., 2002.
80. Rodriguez, P. V. and **Pattichis, M.S.**, “Real-time AM-FM Analysis of Ultrasound Video,” invited in the *45th IEEE Midwest Symposium on Circuits and Systems*, Tulsa, Oklahoma, vol. 1, pp. 216-219, Aug., 2002.
81. **Pattichis, M.S.**, Cacoullos, T., and Soliz, P., “Spatial Image Variability Analysis,” invited in the *45th IEEE Midwest Symposium on Circuits and Systems*, Tulsa, Oklahoma, volume 1, pp. 224-227, Aug., 2002.
82. Ramachandran, J., **Pattichis, M.S.**, Soliz, P., and Wilson, M., “A Hierarchical Segmentation Model for the Lung and the Inter-costal Parenchymal Regions of Chest Radiographs,” invited in the *45th IEEE Midwest Symposium on Circuits and Systems*, Tulsa, Oklahoma, volume 1, pp. 439-442, Aug., 2002.
83. Rodriguez, P. V., **Pattichis, M.S.**, and Jordan R., “Computational SIMD Framework: split-radix simd-fft algorithm, derivation, implementation and performance,” published in *CD-Rom Proceedings of 14th International Conference on DSP (DSP 2002)*, Santorini, Greece, pp. 861-864, vol. 2, Jul., 2002.
84. Kyriakou, E., Voskarides, S., Pattichis, C.S., Istepanian, R., **Pattichis, M.S.** and Schizas, C.N., “Wireless Telemedicine Systems: A Brief Overview,” in Proc. 4th International Workshop on Enterprise Networking and Computing in Healthcare Industry (HEALTHCOM 2002), Nancy, France, pp. 50-56, Jun., 2002.
85. Voskarides, S., Pattichis, C.S., Istepanian, R., Kyriacou, E., **Pattichis, M.S.** and Schizas, C.N., “*Mobile Health Systems: A Brief Overview,*” *in Proceedings of SPIE AeroSense 2002:* *Digital Wireless Communications IV,* Ed. by R. M. Rao, S. A. Dianat, M. D. Zoltowski, Vol. 4740, Orlando, Florida, USA, pp. 124-131, Apr., 2002.
86. **Pattichis, M.S.**, Muralidharan, H., Pattichis, C.S., Soliz, P., “New Image Processing Models for Opacity Image Analysis in Chest Radiographs,” invited in *5th IEEE Southwest* *Symposium on Image Analysis and Interpretation*, Santa Fe, New Mexico, pp. 260-264, Apr., 2002.
87. Ramachandran, J., **Pattichis, M.S.**, and Soliz, P., “Pre-Classification of Chest Radiographs for Improved Active Shape Model Segmentation of Ribs,” invited in *5th IEEE* *Southwest Symposium on Image Analysis and Interpretation*, Santa Fe, New Mexico, pp. 188-192, Apr., 2002.
88. **Pattichis, M.S.**, Pattichis, C.S., Christodoulou, C.I., James, D., Ketai, L., and Soliz, P., “A Screening System for the Assessment of Opacity Profusion in Chest Radiographs of Miners with Pneumoconiosis,” invited in *5th IEEE Southwest Symposium on Image Analysis* *and Interpretation*, Santa Fe, New Mexico, pp. 130-133, Apr., 2002.
89. Pattichis, C.S., and **Pattichis, M.S.**, “Adaptive Neural Network Imaging in Medical Systems,” invited in *Proc. of the 35th Asilomar Conference on Signals, Systems, and* *Computers*, Asilomar Hotel and Conference Grounds, Pacific Grove, CA, vol. 1, pp. 313-317, Nov., 2001.
90. Rodriguez V., P., and **Pattichis, M.S.**, “Adaptive Sampling and Processing of Ultrasound Images,” invited in *Proc. of the 35th Asilomar Conference on Signals, Systems, and* *Computers*, Asilomar Hotel and Conference Grounds, Pacific Grove, CA, vol. 1, pp. 323-327, Nov., 2001.
91. Pattichis, C.S., **Pattichis, M.S.** and Micheli-Tzanakou, E., “Medical Imaging Fusion Applications: An Overview,” invited in *Proc. of the 35th Asilomar Conference on Signals,* *Systems, and Computers*, Asilomar Hotel and Conference Grounds, Pacific Grove, CA, vol. 2, pp. 1263-1267, Nov., 2001.
92. Pattichis, C.S., Christodoulou, C.I., **Pattichis, M.S.**, Pantziaris, M., and Nicolaides, A., “An Integrated System for the Assessment of Ultrasonic Imaging Atherosclerotic Carotid Plaques,” in *Proc. 2001 IEEE Int. Conf. on Image Processing 2001*, Thessaloniki, Greece, vol. 1, pp. 325-328, Oct., 2001.
93. **Pattichis, M.S.**, Zhou, R., and Raman, B., “New Algorithms for Computing Directional Discrete Fourier Transforms,” in *Proc. 2001 IEEE Int. Conf. on Image Processing*, Thessaloniki, Greece, vol. 3, pp. 322-325, Oct., 2001.
94. Ray, N., Havlicek, J., Acton, S.T. and **Pattichis, M.S.**, “Active Contour Segmentation Guided by an AM-FM Dominant Component Analysis,” in *Proc. 2001 IEEE Int. Conf. on Image Processing*, Thessaloniki, Greece, vol. 1, pp. 78-81, Oct., 2001.
95. **Pattichis, M. S.**, Ramachandran, J., Wilson, M., Pattichis, C.S. and Soliz, P., “ Optimal Scanning, Display, and Segmentation of the International Labor Organization (ILO) X-Ray Images Set for Pneumoconiosis,” in *Proceedings of* *the 14th IEEE Symposium on* *Computer-Based Medical Systems,* Bethesda, MD, pp. 511-515, Jul., 2001.
96. Soliz, P., **Pattichis, M.S.**, Ramachandran, J., and James, D.S., “Computer-assisted diagnosis of chest radiographs for pneumoconiosis,” in Proceedings of the *SPIE Medical* *Imaging Conference*, San Diego, California, vol. 1, pp. 667-675, Feb., 2001.
97. **Pattichis, M.S.**, Petropoulos, H., and Brooks, W.H., “MRI Brain Image Segmentation Using

an AM-FM Model,” invited in the 34th Asilomar Conference on Signals, Systems, and

Computers, Asilomar Hotel and Conference Grounds, Pacific Grove, CA, vol. 2,

pp. 906-910, Nov., 2000.

1. Pizano, C.E., Heileman, G.L., Abdallah, C.T. and **Pattichis, M.S.**, “Are Perfect Image Watermarking Schemes Possible?,” invited in the *Proc. 10th IEEE Mediterranean* *Electromechanical Conference (MELECON 2000)*, Limassol, Cyprus, vol. 2, pp. 669-672, May 2000.
2. **Pattichis, M.S.**, “Novel Algorithms for the Accurate, Efficient and Parallel Computation of Multidimensional, Regional Discrete Fourier Transforms,” invited in the *Proc. of the 10th IEEE Mediterranean Electrotechnical Conference (MELECON 2000)*, Limassol, Cyprus, pp. 53-533 May, 2000.
3. **Pattichis, M.S.**, “Least Squares FIR Filter Design Using Frequency Domain Piecewise Polynomial Approximations,” published in the proceedings of *X European SignalProcessing Conference*, Tampere, Finland, Sept. 5-8, 2000.
4. **Pattichis, M.S.**, Bovik, A.C., Havlicek, J.W., and Sidiropoulos, N.D., “On the Representation of Wideband Images Using Permutations for Lossless Coding,” in Proc. of *IEEE Southwest Symposium on Image Analysis and Interpretation*, Austin, Texas, pp. 237-241, Apr., 2000.
5. **Pattichis, M.S.**, Pattichis, C.S., Avraam, M., Bovik, A.C., and Kyriakou, K., “AM-FM Texture Segmentation in Electron Microscopic Muscle Imaging,” invited in *Proc. of the 1999 IEEE* *International Conference on Acoustics, Speech and Signal Processing,* (ICASSP), Phoenix, Arizona, vol. 4, pp. 2331-2334, Mar., 1999.
6. Sidiropoulos, N.D., **Pattichis, M.S.**, Bovik, A.C., and Havlicek, J.W., “COPERM: Transform-domain Energy Compaction by Optimal Permutation,” in *Proc. of the 1998 IEEE* *International Conference on Acoustics, Speech and Signal Processing*, (ICASSP), Seattle, WA, vol. 6, pp. 3301-3304, 1998.
7. Lee, S., **Pattichis, M.S.**, and Bovik, A.C., “Foveated Image/Video Quality Assessment in Curvilinear Coordinates”, *Int. Workshop on Very Low Bitrate Video Coding 98,* pp. 189-192, Oct. 1998.
8. Lee, S., **Pattichis, M.S.**, and Bovik, A.C., “Rate Control for Foveated MPEG/H.263 Video,” in *Proc. IEEE Int. Conf. on Image Processing 98*, vol. 2, pp. 365-369, Oct., 1998.
9. **Pattichis, M.S.**, Pattichis, C.S., Avraam, M., Bovik, A.C., and Kyriakou, K. “Non-Stationary Texture Segmentation in Electron Microscopy Muscle Imaging Using an AM-FM Model,” in *CD-ROM proceedings of the VIII Mediterranean Conference on Medical and Biological* *Engineering and Computing*, Limassol, Cyprus, Jun., 1998.
10. **Pattichis, M.S.**, Christodoulou, C., Pattichis, C.S., and Bovik, A.C., “Non-Stationary Texture Classification Using an AM-FM Model,” in *Proceedings of International Conference on Neural Networks*, Houston, Texas, vol. 3, pp. 1552-1557, Jun. 1997.
11. **Pattichis, M.S.**, and A.C. Bovik, “AM-FM Expansions for Images,” in *Proc. European Signal Processing Conf.*, Trieste, Italy, Sept., 1996.
12. Havlicek, J.P., **Pattichis, M.S.**, Harding, D.S., Christofides, A.C., and Bovik, A.C., “AM-FM Image Analysis Techniques,” in *Proc. of the IEEE Southwest Symposium on Image* *Analysis, and Interpretation*, San Antonio, Texas, pp. 195-200, Apr., 1996.
13. Pattichis, C.S., **Pattichis, M.S.**, Schizas, C.N., “Wavelet Analysis of Motor Unit Action Potentials,” in *Proc. of Engineering in Medicine and Biology Society, 1996. Bridging* *Disciplines for Biomedicine, 18th Annual International Conference of the IEEE*, vol. 4, pp. 1493-1495, 1996.
14. **Pattichis, M.S.**, and Bovik, A.C., “A Fluid Model for Texture Images,” in *Proc. Workshop on Image and Multidimensional Signal Processing*, Belize City, Belize, pp. 18-19, Mar., 1996.
15. **Pattichis, M.S.**, and Bovik, A.C., “Multi-Dimensional Frequency Modulation in Texture Images,” in *Proc. International Conference on Digital Signal Processing*, Limassol, Cyprus, pp. 753-758, Jun., 1995.
16. **Pattichis, M.S.**, and Bovik, A.C., “A Nonlinear Fluid Model for Describing Frequency Modulation of Image Orientations,” in *Proc. IEEE Workshop on Non-Linear Signal and Image Proc.*, Neos Marmaras, Halkidiki, Greece, pp. 198-201, Jun., 1995.
17. **Pattichis, M.S.**, and Pattichis, C.S., “Fast Wavelet Transform in Motor Unit Action Potential Analysis,” in *Proc. Int. Conf. of the IEEE Engineering in Medicine and Biology Society*, San Diego, California, pp. 1225-1226, Oct., 1993.
18. **Pattichis, M.S.**, and Bostick, F.X., “Fast Wavelet Transform Applications in Electromagnetics,” in *Proc. of the Int. Conf. on Digital Signal Processing*, Nicosia, Cyprus, pp. 106-111, July 1993.

## Refereed conference presentations:

1. DeMarco, S., Arge, C.N., **Pattichis, M.S.**, Hock, R., and Henney, C.J., “Methods for estimating total open heliospheric magnetic flux,” *2014 American Geological Union Fall Meeting,* San Francisco, Dec., 2014.
2. **Pattichis, M.S.,** Hock, R., Henney, C., Arge, C., DeMarch, S., Delgado, A.P., Darsey, C., and Jatla, V., “Identifying Coronal Holes: Can we learn any lessons from Computer Aided Diagnosis?,” invited presentation, *2014 Solar Heliospheric & Interplanetary Environment* (*SHINE),* Telluride, Colorado, June 2014.
3. Celedón-Pattichis, S., LópezLeiva, C. A., **Pattichis, M.S.**, & Llamocca, D., “At first it was very hard, then it was fun”: Conjecturing a learning trajectory for underrepresented middle school students in mathematics and engineering,” In K. Gomez (Chair), *Creating contexts of pedagogical and curricular support for non-English background students in mathematics and science*. Paper presented at the annual meeting of the American Educational Research Association, Philadelphia, Pennsylvania, *2014 American Educational Research Association (AERA)*, April 2014.
4. LópezLeiva, C. A., Celedón-Pattichis, S., **Pattichis, M.S.**, & Llamocca, D., “Image representation in a middle school afterschool program**,”** *4th International Realistic Mathematics Education Conference*, Boulder, Colorado, 2013.
5. LópezLeiva, C., Celedón-Pattichis, S., **Pattichis, M.S.**, & Llamocca, D., “Successes and challenges of supporting interactive learning in a mathematics and engineering afterschool program for middle school students,” *Annual meeting of the American Educational Research Association*, San Francisco, California, April, 2013.
6. Celedón-Pattichis, S., LópezLeiva, C. A., **Pattichis, M. S.**, & Llamocca, D., “Advancing out-of-school learning in mathematics and engineering,” In J. Aguirre (Chair), Learning to do math inside and outside of school—fostering productive mathematical practices and identity development for Latin@ youth, *Scientific Research Symposium*, *Annual meeting of the Society for the Advancement of Chicanos and Native Americans in the Sciences*, San Antonio, Texas, October, 2013.
7. LópezLeiva, C., & **Pattichis, M. S.**, “With our feet on the ground”: Affordances and challenges of developing an integrated STEM approach for Latina/o middle school students. In S. Celedón-Pattichis (Chair), Making our voices heard: Negotiating the promises and challenges of STEM education for historically underrepresented youth. Scientific Research Symposium presented at the annual meeting of the *Society for the Advancement of Chicanos and Native Americans in the Sciences*, Seattle, Washington, October, 2012.
8. Murray, V., Llamocca, D., Yuebing, J., Lyke, J., **Pattichis, M.S.**, Achramowicz, S., and Keith A., “Adaptive Wiring Panels using Cell-based Architectures: A First Approach,” *Reconfigurable Systems Workshop*, Albuquerque, New Mexico, 2010.
9. Murillo S, Zamora G., Barriga S., Nemeth S., Crammer R., Edwards A., Bauman W., Soliz P., **Pattichis M.**, "Low-Cost Super Resolution Retinal Imaging with Embedded Denoising: Quantitative and Qualitative Assessment of Reconstructed Images from a Scanning Laser Ophthalmoscope,” in the *2010 Meeting for Research in Vision and Ophthalmology*, ARVO 2010, *Investigative Opthalmology and Visual Sciences*, Abstract number 1803.
10. Barriga, E.S., Murray, V., Agurto, C., **Pattichis, M.S.**, Russel, S.R., and Soliz, P., “Automatic Computer-Based Grading for Age Related Maculopathy,” in the *2010 Meeting for Research in Vision and Ophthalmology*, ARVO 2010, *Investigative Opthalmology and Visual Sciences*, Abstract number 1793.
11. Agurto, C., Murray, V., Barriga, E.S., **Pattichis, M.S.**, Baumann, W., and Soliz, P., “Automatic Classification of Diabetic Retinopathy Photographs Using AM-FM,” in the *2010 Meeting for Research in Vision and Ophthalmology*, ARVO 2010, Investigative Opthalmology and Visual Sciences, Abstract number 1795.
12. Rodriguez, P., Murray, V., and **Pattichis, M.S.**, “A Basis Pursuit Approach for Multi-Scale AM-FM Reconstructions,” *SIAM Conference on Imaging Science*, Chicago, Illinois, April, 2010.
13. Murray, V. and **Pattichis, M.S.**, “Adaptive Wiring Manifold,” ReSpace/MAPLD Conference, Albuquerque, 2010.
14. Davis, H.T., Heileman, G., **Pattichis, M.S.**, Murillo, S., Barriga, E.S. and Soliz, P., “Real-time image quality feedback for fundus camera photography,” in the *2009 Meeting of the Association for Research in Vision and Ophthalmology*, ARVO 2009.
15. Agurto, C., **Pattichis, M.S.**, Murillo, S., Murray, V., Abramoff, M.D., Russell, S.R., Barriga, E.S., Davis, H., Soliz, P., “Detection of Structures in the Retina Using AM-FM for Diabetic Retinopathy Classification,” in the *2009 Meeting of the Association for Research in Vision and Ophthalmology*, ARVO 2009.
16. Barriga, E.S., Russell, S.R., **Pattichis, M.S.**, Murray, V., Murillo, S., Davis, H., Abramoff, M.D. and Soliz, P., “Relationship Between Visual Features and Analytically Derived Features in Non-Exudated AMD Phenotypes: Closing the Semantic Gap,” in the *2009 Meeting of the Association for Research in Vision and Ophthalmology*, ARVO 2009.
17. Kief, C., Suddarth, S., Christodoulou, C., **Pattichis, M.S.**, Pollard, H.E., “Educational Activities for the FPGA Mission Assurance Center,” in *Proc. 2008 ASEE Gulf-Southwest Annual Conference,* UNM, Albuquerque, New Mexico, March 26-28, 2008.
18. Cacoullos, T. and **Pattichis, M.S.**, “Pneumoconiosis Revisited: Classifiers Viewed via ROC Curves and Logic Functions,” in *Proc. of International Conference of Statistical Models for* *Biomedical and Technical Systems* (*Biostat 2006*), Limassol, Cyprus, May, 2006.
19. **Pattichis, M.S.**, “AM-FM Analysis of Medical Images,” invited in Los Alamos National Laboratory Workshop on Image Analysis and Understanding Data from Scientific Experiments, Los Alamos, NM, December 2-6, 2002.
20. Yu, H., **Pattichis, M.S.**, and Goens, M.B., “3-D Object Reconstruction using Tracking of Freehand Ultrasound,” invited in Los Alamos National Laboratory Workshop on Image Analysis and Understanding Data from Scientific Experiments, Los Alamos, NM, December 2-6, 2002.
21. Cai, S. and **Pattichis, M.S.**, “Tumor Growth Image Analysis,” invited in Los Alamos National Laboratory Workshop on Image Analysis and Understanding Data from Scientific Experiments, Los Alamos, NM, December 2-6, 2002.
22. Rodriguez, P. V. and **Pattichis, M.S.**, “Fast Computation of Multidimensional Discrete Fourier Transforms on Modern Single Instruction Multiple Data (SIMD) Architectures,” invited in Los Alamos National Laboratory Workshop on Image Analysis and Understanding Data from Scientific Experiments, Los Alamos, NM, December 2-6, 2002.
23. Kyriacou, K., Schnorrenberg, F., Schizas, C.N., **Pattichis, M.S.**, Pattichis, C.S., *A Modular* *Neural Network System for the Analysis of Immunostained Nuclei in Histopathological* *Sections,* XIV Congress of the International Society of Diagnostic Quantitative Pathology, Oviedo (Spain), September 26-29, 2001.
24. Pattichis, C., Schizas, C., Dimopoulos, Y., Samaras, G., Christodoulou, C., Karaolis, M., Pantziaris, M., **Pattichis, M.S.** and Nicolaides, A., *Evaluation of the Risk of Stroke by* *Telemedicine,* World Congress on Medical Physics and Biomedical Engineering, Scientific Session: *WE-A201-01* Telecom, Telemetry & High Speed Data Transmission, Track: 04, Medical Informatics and Biomedical Information Technology, Chicago, USA, July 23-28, 2000.
25. Pattichis, C.S., **Pattichis, M.S.**, and Middleton, L.T., *The Wavelet Transform in MUAP Analysis,* Abstracts of Electromyography and Motor Control, The X International Congress of EMG, and Clinical Neurophysiology, Kyoto, Japan, vol. 97, no. 4, pp. S167, October 15-19, 1995.
26. Middleton, L., Pattichis, C., Petrondas, D., Souropetsis, M., Schizas, C., and **Pattichis, M.** *Numerical Pattern Recognition in the Automatic Analysis of Motor Unit Potentials: Technical* *Considerations*, IIIrd International Conference of Quantitative EMG, Larnaca, Cyprus, June 5-8, 1988.
27. Pattichis, C., Spanias, A., **Pattichis, M.S.**, Souropetsis, M., Petrondas, D., Schizas, C., and Middleton, L., *Linear Prediction analysis applied in EMG*, IIIrd International Conference on Quantitative EMG, Larnaca, Cyprus, June 5-8, 1988.

## Technical Reports

1. Rodriguez, P., **Pattichis, M.S.** and Jordan, R., “Parallel Single Instruction Multiple Data (SIMD) FFT: Algorithm and Implementation,” HPCERC2003-002, January, 2003.
2. **Pattichis, M.S.** and Zhou, R., “ A Novel Directional Approach for the Scalable, Accurate and Efficient Computation of Two Dimensional Discrete Fourier Transforms,” AHPCC2000-019 report, Fall 2000.
3. Pattichis, C.S. and **Pattichis, M.S.**, “Time-Scale Analysis of Motor Unit Action Potentials,” Technical Report TR-97-11, Department of Computer Science, University of Cyprus, September, 1997.
4. Sidiropoulos, N.D., **Pattichis, M.S.**, Bovik, A.C., and Havlicek, J.W., “COPERM: Transform-Domain Energy Compaction by Optimal Permutation,” Technical Report UT-CVIS-TR-97-002, Center for Vision and Image Sciences, The University of Texas at Austin, July, 1997.