SELECTED ACTIVITIES

SHIRVAIKAR, Mukul V.

Books:

Mukul Shirvaikar and Theodore Elbert, *Fundamentals of Real Time Systems*, Cognella Academic Publishing, San Diego, CA, 2018. ISBN 978-1-5165-0188-5.

Patents:

"Automated Programmable Battery Balancing System and Method of Use," Bruce Garnett Brookshire, Mukul Shirvaikar, Gary Lindsey, February 2, 2021, U.S. Patent No. 10910872.

"Automated Programmable Battery Balancing System and Method of Use," Bruce Garnett Brookshire, Mukul Shirvaikar, Gary Lindsey, April 16, 2019, U.S. Patent No. 10263455.

Sponsored Research, Educational and Equipment Grants:

"SMARTP3M: Smart Pavement Monitoring, Management, and Maintenance," The University of Texas at Tyler Presidential Interdisciplinary Research Grant, P.I. M. Souliman, M. Vechione, M. V. Shirvaikar, Y. Li, August 2020, $13,804.

"Electrical System for Enhancement of Equipment," (extension) Sponsor: Brookshire, PI: Mukul Shirvaikar, 2015, $21,767.

"Electrical System for Enhancement of Equipment," Sponsor: Brookshire, PI: Mukul Shirvaikar, 2015, $8,961.

"Real Time Systems Lab-In-A-Box - Discovery Board Kits and MDK-ARM Keil Embedded Development Tools" ARM University Program, PI: Mukul Shirvaikar, 2014, (estimate based on individual item cost) $15,000.

"Vivaldo Development Tools - 75 Licenses," Xilinx University Program, PI: Mukul Shirvaikar, 2014, $3,297.

"ORS 2014 Orthopedic Research Society Conference - Student Co-curricular Travel Grant," The University of Texas at Tyler Co-curricular Fund, P.I. M. V. Shirvaikar, November 2014, $950.

"Texas Instruments Code Composer Studio Development Tools for the Stellaris Platform," software grant for Electrical Engineering senior design project, PI: Dr. Mukul Shirvaikar, 2013, $2,500.

"UT Tyler Robotics Team Grant for Participation in the IEEE Region 5 Competition," United States Air Force, PI: Mukul Shirvaikar, 2012, $2,000.

"Enhanced Fracture Risk Assessment of Spine Using Stochastically Treated DXA Images," National Institutes of Health, PI: Xuanliang Dong, Co-PI: Mukul Shirvaikar, 2012, $385,000.

"Electrical Engineering Department Software Modernization Initiative Collaboration," National Instruments, P.I. M. V. Shirvaikar, 2011, (in-kind value) $25,000

"Creation of a Community College-University Collaborative to Promote STEM Research and Curriculum Enhancement," Department of Homeland Security, P.I. B. Sheinberg, Senior Personnel M. V. Shirvaikar, 2010, $250,000

"SPEA America Semiconductor Test Engineering Endowment," SPEA America Inc., P.I. D. Hoe, co-P.I. M. V. Shirvaikar, 2010, $300,000

"Google Summer of Code: Implementation of Imaging Algorithms on OMAP3530 Mobile Platform," Google Inc., P.I. P. Poudel, co-P.I. M. V. Shirvaikar, 2010, $5,000

"STARS Grant for Faculty Recruitment – Hector Ochoa," The University of Texas at Tyler System, P.I. M. V. Shirvaikar, 2008, $250,000

"STARS Grant for Faculty Recruitment – David Hoe," The University of Texas at Tyler System, P.I. M. V. Shirvaikar, 2008, $250,000

"STARS Plus Grant for Faculty Recruitment – Hector Ochoa," The University of Texas at Tyler System, P.I. M. V. Shirvaikar, 2008, $65,000

"STARS Plus Grant for Faculty Recruitment – David Hoe," The University of Texas at Tyler System, P.I. M. V. Shirvaikar, 2008, $100,000

"SPIE 2008 International Conference - Student Co-curricular Travel Grant," The University of Texas at Tyler Co-curricular Fund, P.I. M. V. Shirvaikar, November 2007, $1,450

"Quartus II - FPGA Development System," Altera University Program, P.I. M. V. Shirvaikar, July 2007, $2,700

"QSK26A Development Boards For Senior Design," Renesas University Program, P.I. M. V. Shirvaikar, April 2007, $1,000

"UT Collaboration in Lung Injury and Neoplasia," The University of Texas System Equipment Fund, Research Associate with Dr. Steve Idell, UT Health Center at Tyler: M. V. Shirvaikar, March 2007, $300,000

"Applications of the Independent Component Analysis (ICA) Technique to Media Processing," The University of Texas at Tyler Faculty Research Grant, P.I. M. V. Shirvaikar, September 2006, $6,950

"IEEE SSST 2006 Symposium - Student Co-curricular Travel Grant," The University of Texas at Tyler Co-curricular Fund, P.I. M. V. Shirvaikar, December 2005, $3,090

"TI-Khronos Software Development," Texas Instruments Inc., P.I. M. V. Shirvaikar, September 2005, $15,000

"Automated Optical Inspection of Printed Circuit Boards," The University of Texas at Tyler Faculty Research Grant, P.I. M. V. Shirvaikar, September 2005, $5,000

"Back-To-Basics: A Student–Tutor Matching Scheme," TETC Texas Workforce Development Commission, P.I. M. V. Shirvaikar, June 2005, $125,000

"OMAP Pilot Lab Development II," Texas Instruments Inc., P.I. M. V. Shirvaikar, February 2005, $21,000

"Verification of OMAP Codecs," Texas Instruments Inc., P.I. M. V. Shirvaikar, January 2005, $7,500

"Optical Inspection of PCBs," SPEA Inc., P.I. M. V. Shirvaikar, January 2005, $1,000

"Computer Engineering Laboratory Equipment – Matrox Real-Time Imaging System," CECS Research Instrumentation Grant, P.I. M. V. Shirvaikar, January 2005, $9,000

"IEEE SSST 2005 Symposium - Student Co-curricular Travel Grant," The University of Texas at Tyler Co-curricular Fund, P.I. M. V. Shirvaikar, December 2004, $1,320

"OMAP Pilot Lab Development I," Texas Instruments Inc., P.I. M. V. Shirvaikar, November 2004, $6,500

"Real Time Systems Laboratory Equipment," The University of Texas at Tyler LEER Fund, P.I. M. V. Shirvaikar, September 2004, $12,500

"Automatic Interpretation of Road Signs," The University of Texas at Tyler Faculty Research Grant, P.I. M. V. Shirvaikar, September 2004, $6,400

"Active Packets for Wireless Network Security," The University of Texas at Tyler President's Summer Grant, P.I. M. V. Shirvaikar, June 2004, $5,700

"FPGA Development Systems," Altera Inc., P.I. M. V. Shirvaikar, January 2004, $2,150

"FPGA Development Environment," Xilinx Inc., P.I. M. V. Shirvaikar, January 2004, $5,400

"DSP Lab Development," Texas Engineering and Technical Consortium/TI, P.I. M. V. Shirvaikar, September 2003, $16,000

Journal Publications:

Ochoa, H., Shirvaikar, M., and Onyango, B., "A Novel Hybrid Approach to the Foundational Digital Systems Curriculum by Including FPGA Technology and Valuable Hands-on Experience," (accepted for publication), Journal of STEM Education, 2020.

Shirvaikar, Mukul, Lagadapati, Yamuna, and Dong, Xuanliang, "Semivariogram Analysis of Bone Images Implemented on FPGA Architectures," pp.1-20, doi:10.1007/s11554-016-0611-1, Journal of Real-Time Image Processing, 2016. *(2015 impact factor: 1.564)*

Shirvaikar, Mukul, Huang, Ning, and Dong, Xuanliang, "The Measurement of Bone Quality in Medical Images Using Statistical Textural Features," *J. of Medical Imaging & Health Informatics*, vol. 6(6), pp. 1357-1362, 2016.

Dong, Xuanliang, Pinninti, Rajeshwar, Tvinnereim, Amy, Lowe, Timothy, Di Paolo, David, and Shirvaikar, Mukul, "Stochastic predictors from DXA scans of human lumbar vertebrae are correlated with microarchitecture parameters of trabecular bone," *Journal of Biomechanics*, Volume 48, Issue 12 (2015), Pages 2968-2975.

Dong, Xuanliang, Shirvaikar, Mukul, and Pinninti, Rajesh, "The Measurement of Bone Quality in Medical Images Using Statistical Textural Features," (under review), *J. of Medical Imaging & Health Informatics*.

Ochoa, H. and Shirvaikar, M, "An Introductory Course in Electrical Engineering to Improve Student Retention Rates," (in submission process), *American Journal of Engineering Education*.

Dong, Xuanliang, Pinninti, Rajeshwar, Lowe, Timothy, Cussen, Patricia, Ballard, Joyce, Di Paolo, David, and Shirvaikar, Mukul, "Random field assessment of inhomogeneous bone mineral density from DXA scans can enhance the differentiation between postmenopausal women with and without hip fractures," *Journal of Biomechanics*, Volume 48, Issue 6 (2015), Pages 1043-1051.

Dong, Xuanliang, Shirvaikar, Mukul, and Wang, Xiaodu, "Biomechanical Properties and Microarchitecture Parameters of Trabecular Bone are Correlated with Stochastic Measures of 2D Projection Images," *Bone*, October, 2013.

Hoe, David, Comer, Jonathon, Cerda, Juan, Martinez, Chris and Shirvaikar, Mukul, "Cellular Automata-based Parallel Random Number Generators using FPGAs," *International Journal of Reconfigurable Computing*, 2012.

Shirvaikar, Mukul, "Trends in Automated Visual Inspection," *Journal of Real Time Image Processing*, vol.1, no.1, pp.41-44, October, 2006.

Shirvaikar, Mukul and Trivedi, Mohan, "Texture Segmentation: An Unsupervised Approach," *International Journal of Uncertainty, Fuzziness, and Knowledge-based Systems*, vol.3, no.4, pp.431-449, 1995.

Shirvaikar, Mukul and Trivedi, Mohan, "A Neural Network Filter To Detect Small Targets in High Clutter Backgrounds," *IEEE Transactions on Neural Networks*, vol.6, no.1, pp.252-257, January 1995.

Shirvaikar, Mukul and Trivedi, Mohan, "Developing texture-based image clutter measures for object detection," *Optical Engineering*, vol.31, no.12, pp.2628-2639, December 1992.

Rajavelu, A., Musavi, M. T. and Shirvaikar, M. V., "A Neural Network Approach to Character Recognition," *Neural Networks*, vol.2, pp.387-393, September 1989.

Musavi, M. T., Shirvaikar, M. V., Ramanathan, E. and Nekovei, A. R., "A Vision Based Method to Automate Map Processing," *Pattern Recognition*, vol.21, no.4, pp.319-326, July 1988.

Conference Proceedings:

Grecos, C., Shirvaikar, M. and Kehtarnavaz, N., "Heuristic approaches for porting Deep Neural Networks (DNN) on to mobile devices," Proceedings of the SPIE International Conference on Real Time Image Processing and Deep Learning, Orlando, FL, April, 2021.

Richey, B., and Shirvaikar, M., "Deep learning based real-time detection of northern corn leaf blight crop disease on low power microcontrollers," Proceedings of the SPIE International Conference on Real Time Image Processing and Deep Learning, Orlando, FL, April, 2021.

Ravela, R., Shirvaikar, M. and Grecos, C., "No-reference image quality assessment based on residual neural networks (ResNets)," Proceedings of the SPIE International Conference on Real Time Image Processing and Deep Learning, Anaheim, CA, April, 2020.

Richey, B., Majumder, S., Shirvaikar, M., Kehtarnavaz, N., "Real-time detection of maize crop disease via a deep learning-based smartphone app," Proceedings of the SPIE International Conference on Real Time Image Processing and Deep Learning, Anaheim, CA, April, 2020.

Brown, W. and Shirvaikar, M, "Supporting Students in East Texas through Career and Technical Education (CTE) Programs," *East Texas Research Conference*, Tyler, TX, May 2019.

Ravela, R., Shirvaikar, M. and Grecos, C., "No-reference image quality assessment based on deep convolutional neural networks," Proceedings of the SPIE International Conference on Real Time Image Processing and Deep Learning, Baltimore, MD, April, 2019.

Maheshwary, P., Shirvaikar, M., Malche, T., and Kumar, R., "Mobile Detection of Crop Diseases for Agricultural Yield Management," Proceedings of the SPIE International Conference on Real Time Image Processing and Deep Learning, Baltimore, MD, April, 2019.

Onyango, B., Ochoa, H. and Shirvaikar, M, "Modernization of Curriculum for the Undergraduate Digital Systems Course," *Proceedings of the 2019 ASEE Gulf-Southwest Annual Conference*, Tyler, TX, March 2019.

McGinnis, M., Boylan, J., Gangone, M., Shirvaikar, M, and Garcia, A., "Creation and Delivery of a Leadership Training Conference for Engineering Student Organizations," *Proceedings of the 2019 ASEE Gulf-Southwest Annual Conference*, Tyler, TX, March 2019.

Lohani, B., Indic, P. and Shirvaikar, M., "Extraction of vital signs using real time video analysis for neonatal monitoring," *Proceedings of the SPIE International Conference on Real Time Image and Video Processing*, Orlando, FL, April, 2018.

Maheshwary, P., Shirvaikar, M. and Grecos, C., "Blind image sharpness metric based on edge and texture features.," *Proceedings of the SPIE International Conference on Real Time Image and Video Proce*ssing, Orlando, FL, April, 2018.

Maheshwary, P., Malche, T., Shirvaikar, M. and Grecos, C., "Adopting cyber security practices in Internet of Things: a review," *Proceedings of the SPIE International Conference on Autonomous Systems: Sensors, Vehicles, Security, and the Internet of Everything*, Orlando, FL, April, 2018.

Ochoa, H. and Shirvaikar, M, " A Survey of Digital Systems Curriculum and Pedagogy in Electrical and Computer Engineering Programs," *Proceedings of the 2018 ASEE Gulf-Southwest Annual Conference*, Austin, TX, April 2018.

Shirvaikar, M., Paydarfar, P. and Indic, P, "Real time video analysis to monitor neonatal medical condition," Proceedings of the SPIE International Conference on Real Time Image Processing, Anaheim, CA, April, 2017.

Dong, Xuanliang, Pinninti, Rajeshwar, Tvinnereim, Amy, Lowe, Timothy, Di Paolo, David, and Shirvaikar, Mukul, "Stochastic predictors from DXA scans of human lumbar vertebrae are correlated with microarchitecture parameters of trabecular bone," American Society for Bone and Mineral Research (ASBMR) 2015 Annual Meeting, Seattle, Washington, October 2015.

Pinninti, R, Cussen, P, Lowe, T, Ballard, J, Di Paolo, D, Shirvaikar, M, and Dong, X, "Comparison of Stochastic Predictors and Trabecular Bone Score (TBS) in Predicting the Risk of Hip Fracture for Postmenopausal Women," 61st Annual Meeting of the Orthopaedic Research Society, ORS 2015, Las Vegas, March 2015.

Lagadapati, Y, Shirvaikar, M. and Dong, X, "Fast Semivariogram Computation Using FPGA Architectures," Proceedings of the SPIE International Conference on Real Time Image Processing, San Francisco, CA, February, 2015.

Pinninti, R, Dong, X, Shirvaikar, M, et al, "Stochastic Predictors from DXA Scans Improve the Forecast of Hip Fracture for Postmenopausal Women," 60th Annual Meeting of the Orthopaedic Research Society, ORS 2014, New Orleans, March 2014.

Ochoa, H. and Shirvaikar, M, "An Update: The Engagement and Retention of Electrical Engineering Students with a First Semester Freshman Experience Course," *Proceedings. of the American Society of Engineering Education Annual Conference,* ASEE 2013, Atlanta, GA, June, 2013.

Hoe, D and Shirvaikar, M, "Introduction of Semiconductor Test Engineering into the BSEE Curriculum," *Proceedings. of the American Society of Engineering Education Annual Conference,* ASEE 2011, Vancouver, BC, June, 2011.

Ochoa, H. and Shirvaikar, M, "The Engagement and Retention of Electrical Engineering Students with a First Semester Freshman Experience Course," *Proceedings. of the American Society of Engineering Education Annual Conference,* ASEE 2011, Vancouver, BC, June, 2011.

Dong, X, Huang, N, Shirvaikar**,** M. and Wang, X, "Inhomogeneity of Bone Mineral Distribution in 2D Projection Images of Trabecular Bone is Associated With Its Micro-Architecture and Biomechanical Properties," *Proceedings of the ASME 2011 Summer Bioengineering Conference,* Farmington, PA, June 2011.

Shirvaikar, M. and Poudel, P, "Optimization of Image Processing Algorithms on Mobile Platforms," *Proceedings of the SPIE International Conference on Real Time Image Processing*, San Francisco, CA, January, 2011.

Ochoa, H. and Shirvaikar, M, "The Retention and Engagement of Electrical Engineering Students with a First Semester Freshman Experience Course.", *Proceedings of the 2010 ASEE Gulf-Southwest Annual Conference*, Lake Charles, LA, March 2010.

Shirvaikar, M. and Poudel, P., "Optimization of Computer Vision Algorithms for Real Time Platforms," *Proceedings of the 42nd IEEE Southeastern Symposium on System Theory*, SSST 2010, Tyler, TX, March, 2010.

Shirvaikar, M. and Taylor, R., "Performance Analysis of Range Sensors for a Real-Time Power Plant Coal Level Sensing System," *Proceedings of the 42nd IEEE Southeastern Symposium on System Theory*, SSST 2010, Tyler, TX, March, 2010.

Shirvaikar, M. and Somaraju, K, "Laboratory Curriculum Development using Renesas Technology," *Proceedings of the American Society of Engineering Education Annual Conference*, ASEE 2009, Austin, TX, June, 2009.

Shirvaikar, M. and Bushnaq, T, "A Comparison between DSP and FPGA Platforms for Real-Time Imaging Applications," *Proceedings of the SPIE International Conference on Real Time Image Processing*, San Jose, CA, vol. 7244, January, 2009.

Shirvaikar, M. and Beams, D, "The Back-To-Basics Peer Tutoring Program: Results and Experiences," *Proceedings of the American Society of Engineering Education Annual Conference,* ASEE 2008, Pittsburgh, PA, June, 2008.

Shirvaikar, M. and Bushnaq, T, "VHDL implementation of wavelet packet transforms using SIMULINK tools," *Proceedings of the SPIE International Conference on Real Time Image Processing*, San Jose, CA, vol. #6811, January, 2008.

Shirvaikar, M. and Addepalli, S., "Evaluation of the independent component analysis algorithm for face recognition under varying conditions," (accepted) *Proceedings of the SPIE International Conference on Image Processing: Algorithms and Systems VII*, San Jose, CA, vol. #6812, January, 2008.

Shirvaikar, M. and Satyala, N., "A Virtual Machine Environment for Real Time Systems Laboratories," *Proceedings of the American Society of Engineering Education Annual Conference*, ASEE 2007, Honolulu, HI, June, 2007.

Shirvaikar, M., Beams, D. and Pieper, R., "Back To Basics: A Student-Tutor Matching Program," *Proceedings of the American Society of Engineering Education Annual Conference*, ASEE 2006, Chicago, IL, June, 2006.

Shirvaikar, M., Humphries, M. and Estevez, L., "Real Time Systems Laboratory Development: Experiments Focusing on a Dual Core Processor," *Proceedings of the American Society of Engineering Education Annual Conference*, ASEE 2006, Chicago, IL, June, 2006.

Radev, P. and Shirvaikar, M., "Enhancement of Flying Probe Tester Systems with Automated Optical Inspection," *Proceedings of the 38th IEEE Southeastern Symposium on System Theory*, SSST 2006, Cookeville, TN, March, 2006.

Pieper, R., Shirvaikar, M. and Salvatierra, J., "A Transmission Line Model for Analysis of Thin Film Optical Filters," *Proceedings of the 38th IEEE Southeastern Symposium on System Theory*, SSST 2006, Cookeville, TN, March, 2006.

Bose, N., Shirvaikar, M. and Pieper, R., "A Real Time Automatic Sign Interpretation System for Operator Assistance," *Proceedings of the 38th IEEE Southeastern Symposium on System Theory*, SSST 2006, Cookeville, TN, March, 2006.

Humphries, M., Shirvaikar, M. and Estevez, L., "Real Time Systems Laboratory Development Using the TI OMAP Platform," *Proceedings of the American Society of Engineering Education Annual Conference*, ASEE 2005, Portland, Oregon, June, 2005.

Dattaprasad, S., Pieper, R. and Shirvaikar, M., "Restoration of Color Images using Wavelets," *Proceedings of the 37th IEEE Southeastern Symposium on System Theory*, SSST 2005, Tuskegee, AL, March, 2005.

Humphries, M., Radev, P. and Shirvaikar, M., "An Algorithm for Real Time Vehicle Tracking," *Proceedings of the 37th IEEE Southeastern Symposium on System Theory*, SSST 2005, Tuskegee, AL, March, 2005.

Shirvaikar, M., "Automatic Detection and Interpretation of Road Signs," *Proceedings of the 36th IEEE Southeastern Symposium on System Theory*, Atlanta, March, 2004.

Shirvaikar, M., "An Optimal Measure for Camera Focus and Exposure," *Proceedings of the 36th IEEE Southeastern Symposium on System Theory*, Atlanta, March, 2004.

Estevez, L. and Shirvaikar, M., "Designing a Digital Still Camera with MPEG4, MP3 and 802.11 Features," Workshop, *Embedded Systems Conference*, San Francisco, 2002.

Shirvaikar, M. and Bezdek, J., "Edge Detection Using the Fuzzy Control Paradigm," *Proceedings of the Second European Congress on Intelligent Techniques and Soft Computing*, Aachen, Germany, EUFIT'94.

Invited Papers:

Shirvaikar, M. and Choudur, L., "Spatial Statistical Interpolation Methods for Image Enhancement," ARIANA Project Symposium, Inverse problems in Earth observation and cartography, INRIA, France, 1999.

Shirvaikar, M., "Texture Segmentation: An Unsupervised Approach," 3rd International Conference on Fuzzy Logic, Neural Nets and Soft Computing, Iizuka, Japan, August 1994.

Trivedi, M. and Shirvaikar, M., "Quantitative Characterization of Image Clutter: Problems and Promises," 3rd Annual Ground Target Modeling Conference, Houghton, MI, August 1992.

Invited Lectures:

Shirvaikar, Mukul, "Image Processing Research," IEEE Corona Chapter, University of Texas at Tyler, February 2014.

Shirvaikar, Mukul, "Energy Research at the University of Texas at Tyler," National Environmental Engineering Research Institute, India, June 2010.

Shirvaikar, Mukul, "Automated Optical Inspection," *IEEE Colloquium*, University of Texas at Dallas, 2006.

Shirvaikar, Mukul, "Lab Development on the TI OMAP Platform," Texas Instruments, Dallas, TX, 2005.

Shirvaikar, Mukul, "Real Time Image Processing," University of Texas Health Center at Tyler, 2004.

Significant Reports:

Shirvaikar, Mukul, "Electrical Engineering ABET Self-Study Report," The University of Texas at Tyler*,* July 2020.

Shirvaikar, Mukul, "EPS Equipment Test Report for DSE Technologies Inc.," The University of Texas at Tyler*,* June 2017.

Shirvaikar, Mukul as a Member of the Engineering Program Review Panel, "Feasibility Evaluation Report on Proposed Engineering Program at Confidential University," *Arkansas Higher Education Coordinating Board,* November 2013.

Shirvaikar, Mukul as a Member of the Tuning Oversight Council for Engineering in Texas, "Making Opportunity Affordable in Texas: A Student-Centered Approach: Tuning of Electrical Engineering," *Texas Higher Education Coordinating Board,* May 2011.

Shirvaikar, Mukul, "Back-To-Basics Tutoring Program Final Report," The University of Texas at Tyler, *Texas Workforce Development Commission,* January 2009.

Shirvaikar, Mukul, "Electrical Engineering ABET Self-Study Report," The University of Texas at Tyler*,* July 2008.

Shirvaikar, Mukul, "Back-To-Basics Tutoring Program 2007-2008 Annual Report," The University of Texas at Tyler, *Texas Workforce Development Commission,* July 2008.

Shirvaikar, Mukul, "Face Recognition using the Independent Component Analysis Algorithm," The University of Texas at Tyler*,* September 2007.

Shirvaikar, Mukul, "2003-2004 TETC/TI DSP Laboratory Grant Report," Electrical Engineering, The University of Texas at Tyler, June 11, 2004.

Masters Graduate Student Advising

Ravi Shankar Ravela, "No-Reference Image Quality Assessment", May 2019.

Brolyne Onyango, "Digital Systems Lab Curriculum Development using FPGAs and Multisim Simulation Software", May 2019.

Bhushan Lohani, "Extraction of vital signs using real time video analysis for neonatal monitoring", December 2018.

Yamuna Lagadapati, "Fast Semivariogram Computation Using FPGA Architectures", (expected graduation date), May, 2015.

Rajeshwar Pinninti, "Stochastic Assessment of Bone Fragility in Human Lumbar Spine", May, 2015.

Ning Huang, "The Measurement of Bone Quality in Medical Images Using Statistical Textural Features", Graduated, August, 2011.

Pramod Poudel, "Optimization of Computer Vision Algorithms for Real Time Platforms", Graduated, December, 2010.

Ralph Taylor, "Implementation of a Coal Level Sensing and Control System Comparing Range Sensor Modalities", Graduated, August 2010.

Karthik Somaraju, "Laboratory Development using the QSK-26A Renesas Microcontroller Board", Graduated, December 2008.

Tariq Bushnaq, "VHDL implementation of wavelet packet transforms using SIMULINK tools", Graduated, May 2008.

Suresh Addepalli, "Face Recognition using the Independent Component Analysis Algorithm", Graduated, December 2007.

Nikhil Satyala, "A Virtual Machine Environment for Real Time Systems Laboratories", Graduated May, 2007.

Niladri Bose, "An Automatic Sign Interpretation (ASI) System", Graduated December, 2005.

Mark Humphries, "The Development of Real Time Systems Laboratory Curriculum Based on a Dual-Core Processor Platform", Graduated December, 2005.

Penio Radev, "Performance Enhancement of a Flying Probe Tester (FPT) with Automated Optical Inspection (AOI)", Graduated December, 2005.

Masters Graduate Student Committee Member

Indu Reddy Enukonda, "Influence of Posterior Elements on the Correlations between Microarchitecture Parameters of Trabecular Bone and Stochastic Predictors from the DXA Scans of Human Lumbar Vertebrae", August 2021.

Mohammed Alenazi, "Assessment of Cardiorespiratory Interactions during Life-threatening Events in Pre-term Infants using Point Process and Bivariate Algorithms", May 2021.

Alhagie Sallah, "A Real-time Internet of Things (IoT) Based Affective Framework for Monitoring Emotions in Infants", May 2020.

Prajwal Bhandari, "Analysis and tests for a hybrid model created from classical Taguchi and Goal Post manufacturing loss models", August 2019.

Youssef Baiji, "Detecting leakage in a pipe using LoRaWAN enabled sensors together with implementing Machine Learning algorithm in the front end for smart detection", May 2019.

Apurupa Amperayani, "Assessment of Risk in Pre-term Infants using Point Process and Machine Learning Approaches", April 2018.

Sumit Verma, "Design and Simulation of an 8-bit Successive Approximation Register Charge-Redistribution Analog-to-Digital Converter", December 2017.

Terver Maor, "Impacts of Power System-Tied Distributed Generation on the Performance of Protection Systems", July 2017.

Sandeep Angara, "License Plate Recognition Algorithms", December 2015.

Dinesh Veeramachaneni, "The Implementation of Compressive Sensing Algorithms on an ARM Processor and an FPGA", May, 2015.

Mukesh Reddy Rudra, "Modeling of Titanium Dioxide Based Memristors with Integration of Tunnel Barrier Transport and Linear Nonlinear Drift Mechanisms", May, 2014.

Yosef Woldeamanuel, "Design of a 2.4GHz Horizontally Polarized Microstrip Patch Antenna Using Rectangular and Circular Directors and Reflectors", October, 2012.

Charan Teja Enugula, "A Compressive Radar System using a Chaotic Frequency Modulation (FM) Signal Generated with the Bernoulli Map", April, 2012.

Xiaoyu Jin, "Optimization of Short Channel RF CMOS Low Noise Amplifiers by Geometric Programming", March, 2012.

Deepthi Bollepalli, "Design and Implementation of Fault Tolerant Adders on Field Programmable Gate Arrays", March, 2012.

Ramya Mudhiganti, "A Comparative Analysis of Feature Extraction Techniques for EEG Signals from Alzheimer Patients", March, 2012.

Yuva Chejerla, "Power Quality and Voltage Stability of Power Systems with a Large Share of Distributed Energy Resources", March, 2012.

Sowjanya Puttagunta, "An Evaluation of CMOS Adders for Robustness and Fault Detectability in Nanoscale Technologies", November, 2011.

Rahul Gera, "Analysis of Adder Circuits in Deep Submicron CMOS Technologies", August, 2011.

Jiwan Sigdel, "Fermi-Dirac Analysis, Modeling and Simulation of an Organic Schottky Diode with Trapped Charge", July, 2011.

Joshua Jemegbe, "Using a Micro Integrator to Eliminate the numerical Butterfly Effect in Non-Linear Chaotic Partial Differential Equations", July, 2011.

Venkata Mandala, "A Study of Multiprocessor Systems using 8-bit microcontrollers implemented on Field Programmable Gate Arrays", July, 2011.

Sabir Ahmed, "Compression of Speech Signals for Mobile Systems Using Compressive Sensing", July, 2011.

Sudarshan Tipi Reddy, "Design of a Micro-strip Antenna for 2.4 GHz applications with a Radiation Pattern in the Horizontal Direction", July, 2011.

Hemasri Kollipara, "Design of a Uniform Circular Phase Array Smart Antenna for 2.4 GHz Applications", April, 2011.

Raheez Reppal, "Design of a Radio Frequency Tracking System to Locate Multiple Objects Using Triangulation and Spread Spectrum Technology", February, 2011.

Sriram Boppana, "Small-Signal Modeling of Power Factor Controllers", August, 2010.

Sai Haridass, "Fault Tolerant Block Based Neural Network", April, 2010.

Sandeep Narkimelli, "Scattering of Electromagnetic Radiation for a Perfect Electric Cylinder by Using Multiple Angles of Polarization", January, 2010.

Raghavendra Nakka, "Analysis of Induced Currents on High Velocity Target Surfaces Using the Lorentz Transformation", July, 2009.

Vasudeva Puttagunta, "Quasi-Static Modeling Approach for Metal-Organic Semiconductor-Metal Devices", April, 2009.