THE UNIVERSITY OF TEXAS AT TYLER

College of Engineering

Mukul V. Shirvaikar, Ph.D.

Professor Electrical Engineering
The University of Texas at Tyler

Education:

Ph.D.	Electrical Engineering, University of Tennessee, 1993
M.S.	Electrical Engineering, University of Maine, 1988
B.Tech.(BS)	Electrical Engineering, Indian Institute of Technology BHU, 1986

Professional Service:

- Associate Editor, Journal of Real Time Image Processing
- Associate Editor, Journal of Medical Imaging and Health Informatics
- Member, Technical Committee, SPIE Conference on Real Time Image and Video Processing
- ABET Program Evaluator
- Senior Member, IEEE

Research Interests:

My research is focused on the following areas or combinations thereof which are currently funded by grants or have been in the past:

- **Real Time Embedded Systems** - Oil and Gas Industry, Control Applications, ARM, Atmel, TI processors, RTOS implementations
- **Image and Signal Processing** - Efficient implementation of algorithms, FPGA, ASIC, DSP, Multi-core asymmetric architectures
- **Robotics and Computer Vision** - Image Understanding Algorithms, Face Recognition, Automated Sign Recognition
- **Medical Imaging** - Statistical Analysis of Medical Images, Bone Modeling
- **Engineering Education** - Student Retention, Curricular Development

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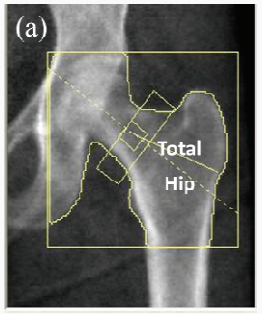
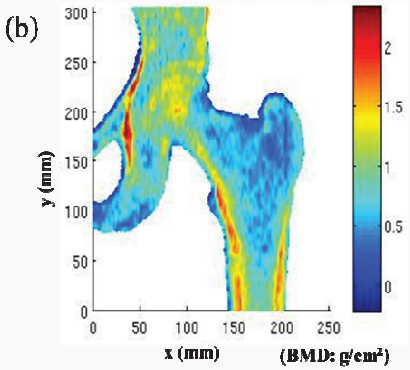
Areas of Research Interest





Medical Image Analysis (NIH grant):

- Stochastic assessment of the BMD map from DXA scans for predicting hip fractures
- Clinical goal to make an economical prognostic tool

Real Time Embedded Systems (Private Industry grant)

- Industry applications requiring high reliability

Image and Signal Processing (Texas Instruments grant)

- Cutting edge architectures to implement imaging algorithms

Engineering Education (Texas Workforce Commision, SPEA grants)

- Peer tutoring program to improve student retention
- Career skills preparation for local industry

Select Publications:

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

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.

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.

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, "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.

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