

YOGESH RATHI

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OBJECTIVE

Seeking a challenging opportunity in the field of Medical Image Processing and/or Computer Vision.

EDUCATION

PhD., Electrical & Computer Engineering, Georgia Institute of Technology, AtlantaFall 2003-Present

Research Interests: Computer Vision, Image Processing, PDE's, Particle Filtering, Segmentation, Tracking
Thesis: Filtering for Closed Curves
Minor: Mathematics
Advisor: Professor Allen Tannenbaum

M.S., Mathematics, Birla Institute of Technology & Science (BITS), Pilani, India1992-1997

Thesis: Design and Simulation of adaptive Lapped Orthogonal image coding technique
Awards: Motorola Award for Best Student Project in Fall 96.

B.E., Electrical & Electronics Engineering, BITS, Pilani, India.....(Dual Degree Program)...1992-1997

EXPERIENCE SUMMARY

Experience developing new algorithms for application in Computer Vision, Medical Image Processing, Pattern Recognition, Tracking and Segmentation. More than 6 years of experience as a software engineer with knowledge of entire product life cycle development. Experience in writing Signal/Image Processing algorithms, Device drivers in C/C++ and Graphical User Interface (GUI) using VB and MFC.

CAREER HISTORY

Graduate Research Assistant, MINERVA RESEARCH GROUP, GATECH, ATLANTA, GA..... Aug 03 – Present
♦ Research topics included: DTI-MRI image Segmentation, Tracking, Shape Analysis, Filtering.

Software Engineer, TERADYNE, BOSTON, MA..... Sept 99 – Aug 03
♦ Developed a DSP library in C/C++
♦ Designed and implemented (in C++) thread-safe device drivers used in circuit testing industry
♦ Designed and implemented COM modules (using ATL) with documents written in UML (Rational Rose)
♦ Designed and developed GUI modules in VB (utilizing ActiveX clients and servers)
♦ Implemented algorithms to test signal outputs of GSM cell phones

Research Engineer, SCIENTIFIC SYSTEMS INC, WOBURN, MA..... Oct 97 – Aug 99
♦ Developed multithreaded GUI applications using MFC (VC++) (For Statistical Forecasting Tool)
♦ Implemented C algorithms for the back end processing of the GUI
♦ Tested C routines for cross-platform compatibility (Unix and Windows)
♦ Implemented programs in Matlab and its interface to C (C-Mex files)

Research Intern, CENTRAL ELECTRONICS ENG RESEARCH INSTITUTE, INDIA Jan 97 – July 97
♦ Developed a software (in C) for decoding packetized video elementary stream using MPEG-2 standards. In particular the I, P and B pictures were successfully decoded.

Projects: TUFTS UNIVERSITY, BOSTON, MA.....May 02 – Aug 02

- ◆ Derived mathematical formulation for the maximum Spectral coefficient estimation of various transforms like Fourier, Haar and Hadamard for a first order Markov process. These estimates were used for image reconstruction (in case of a packet loss) and enhancement.

PUBLICATIONS

- ◆ Y. Rathi, N. Vaswani, A. Tannenbaum, A. Yezzi, “Particle Filtering for Geometric Active Contours with Application to Tracking Moving and Deforming Objects”, CVPR 05
- ◆ Y. Rathi, N. Vaswani, A. Tannenbaum, A. Yezzi, “Tracking Deforming Objects using Particle Filtering for Geometric Active Contours”, submitted to PAMI
- ◆ Y. Rathi, N. Vaswani, A. Tannenbaum, A. Yezzi, “A Generic framework for Tracking using Particle Filter with Dynamic Shape Prior”, submitted to Tran. Image Processing
- ◆ Y. Rathi, S. Dambreville, A. Tannenbaum, “Comparative Analysis of Kernel Methods for Statistical Shape learning”, in 2nd workshop on CVAMIA 06 (in conjunction with ECCV).
- ◆ Y. Rathi, O. Michailovich, J. Malcolm, A. Tannenbaum, “Seeing the Unseen: Segmenting with Distributions”, submitted to IASTED Conf. on Signal and Image Processing, 06.
- ◆ Y. Rathi, S. Dambreville, A. Tannenbaum, “Statistical Shape Analysis using kernel PCA”, SPIE 06
- ◆ Y. Rathi, P. Olver, G. Sapiro, A. Tannenbaum, “Affine Invariant Surface Evolutions for 3D Image Segmentation”, SPIE 06
- ◆ Y. Rathi, S. Dambreville, A. Tannenbaum, “Particle Filtering with Dynamic Shape Prior”, ICIAR 06.
- ◆ S. Dambreville, Y. Rathi, A. Tannenbaum, “A Shape-Based Approach to Robust Image Segmentation”, Intl. Conference on Image Analysis and Recognition, 2006.
- ◆ S. Dambreville, Y. Rathi, A. Tannenbaum, “Shape based approach to Robust Image Segmentation using Kernel PCA”, CVPR 06.
- ◆ S. Dambreville, Y. Rathi, A. Tannenbaum, “Shape prior in kernel space for geometric active contours”, Electronic Imaging: SPIE 06
- ◆ S. Dambreville, Y. Rathi, A. Tannenbaum, “Unscented Kalman filtering Applied to Geometric Active Contours for Tracking Deformable Objects”, accepted as invited paper for ACC 06
- ◆ N. Vaswani, A. Tannenbaum, Y. Rathi, A. Yezzi, “Particle Filters for Infinite (Large) dimensional state spaces-Part I”, in ICASSP 06
- ◆ S. Kumar, Y. Rathi, R. C. Jain, “An Efficient Lapped Orthogonal Image Coding Technique”, IEEE Tran. on Consumer Electronics, Vol 43, pp 994-1002, Nov 97

TECHNICAL SKILLS

Languages: C/C++ ◆ VB ◆ MATLAB ◆ Java

Proficient In: VC++ ◆ ITK ◆ MFC ◆ COM ◆ ATL ◆ Rational Rose ◆ VTK ◆ Tcl/Tk ◆ VS.NET

Platforms: Windows XP ◆ UNIX ◆ Linux

OTHER

Permanent Resident of USA