Matheen Siddiqui

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Objective To obtain a full-time position as a researcher, programmer or engineer in the field of Machine Vision, Pattern Recognition, or Computer Graphics

Education:

Boston University College of Engineering, Boston, MA
Master of Science in Signal Processing, January 2002
GPA: 4.0/4.0
Thesis: *Surface Reconstruction from Multiple Views*

Boston University College of Engineering, Boston, MA
Bachelor of Science Degree in Computer Systems Engineering, January 2000
GPA 3.97/4.0 (Dean's List 7 Semesters)
Salutatorian
Thesis: *Camera Calibration with Applications to Stereo*

Projects:

- Restored uncorrected Hubble Space Telescope Image of the M51 Galaxy
- Reconstructed Atmospheric Emission Densities from data obtained from a ground based network of imaging spectrograph instruments
- Developed and implemented on-line Hand Writing Recognition Software
- Designed algorithm for tracking planer patches in 3D
- Implemented an algorithm to detect faces in images
- Developed program to register frames from video into image mosaic
- Implemented Ray Tracer with caustic lighting effects

Related Course Work

Introduction to Computer Graphics	Image and Video Computing
Advanced Computer Graphics	Digital Signal Processing
Advanced Microprocessors	Stochastic Processes
Information Theory	Pattern Recognition
Image Restoration and Reconstruction	

Computer Skills

Operating Systems:	Languages:		Misc.
Unix,Linux	C/C++; Matlab	MFC	Motorola 68HC05/12/16
Windows 98/2000	Java; Visual Basic	OpenGL, Glut	ClearCase Version Control
	Cognex CVL		

Honors

- Member of Tau Beta Pi Engineering Honor Society
- Member of Golden Key National Honor Society
- Fall 1998 Undergraduate Research Opportunities Program (UROP) Award Recipient
- 2nd place in ACM Regional Finals Programming Contest, Westfield State College, 1996

Work Experience:

Senior Software Engineer
Cognex Corp., Natick, MA (Jan. 2002 - present)

- Developed Single and Multi-view Camera Calibration Tools
- Implemented numerical back-ends for Thin Plate Spline Transform and Non-Rigid Search tools.
- Developed Matrix Library to solve Sparse Eigen-Systems
- Developed Search Tools for localizing interest regions in Semiconductor Wafer Images.
- Implemented DXF-file parser for CAD Import Tool.

Research Experience:

Research Assistant
Boston University IVC Group, Boston, MA (July 1998 - Dec 2001)

- Developing Structure recovery methods for smooth surfaces
- Developed Structure from Multiple Views component of a body pose recovery system.
- Implemented feature tracking and calibration software
- Extended tracking software for robustness to changes in light
- Designed and Implemented adaptive triangulation algorithm

Algorithm Developer
MIT: Lincoln Laboratories, Lexington, MA (Summer 1999)

- Designed tank classification algorithm for radar imagery
- Developed tank detection algorithm
- Analyzed image normalization schemes to reduce radar data disparity

Teaching Experience:

Graduate Teaching Fellow
Boston University, College of Engineering, Boston MA

Electric Circuit Theory (Jan. 2000 - May 2000)

- Led class discussion and laboratories
- Maintained class web site

Computer Communication and Networks (Sept. 2000 - Dec. 2000)

- Led laboratories
- Graded student lab work

Publications:

- Siddiqui, K.I. Hero, A.0. Siddiqui, M.M. *Segmentation and Quantification of Microarray Images*, to appear in IEEE Int. Conference on Image Processing, Barcelona, Spain, Sept. 2003.
- Siddiqui, M. Sclaroff, S. *Surface Reconstruction from Multiple Views using Rational B-Splines and Knot Insertion*, 3DPVT02
- Siddiqui, K. I. Hero, A. O. Siddiqui, M. M. *Mathematical Morphology applied for Spot Segmentation and Quantification of Gene Microarray Images*, to appear in Proc. of 36th IEEE Asilomar Conference on Signals, Systems and Computers, Pacific Grove, California (2002).
- Siddiqui, M. Sclaroff, S. *Surface Reconstruction from Multiple Views using Rational B-Splines*, Technical Sketch, CVPR'01
- Rosales, R. Siddiqui, M. Alon, J. Sclaroff, S. *Estimating Body Pose using Uncalibrated Cameras*, In Proc. CVPR'01

Interests: Micro-controllers, Billiards, Volleyball, Weight Lifting, Fishing