

Nazrul Islam

Chair, Security Systems and Law Enforcement Technology Department at Farmingdale State College
Farmingdale, NY, US

Dr. Islam is Chair of the Security Systems and Law Enforcement Technology Department, and a member of the Protect New York think tank.

Biography

Dr. Nazrul Islam is a professor in, and chair of, the Security Systems and Law Enforcement Technology Department at Farmingdale State College. He has been in academia since 1991, and has worked at several other institutions, including Old Dominion University, University of South Alabama, University of West Florida, and Bangladesh University of Engineering and Technology.

His research interests include optical communication, wireless communication, digital image processing, security technologies and solid state devices. He has published more than 150 articles in refereed journals and for conferences, and has successfully completed research projects sponsored by federal and private institutions, including U.S. Army, National Science Foundation, and Department of Energy.

Availability

Keynote, Moderator, Panelist, Workshop, Host/MC, Author Appearance, Corporate Training

Industry Expertise

Computer/Network Security, Education/Learning, Electrical Engineering, Telecommunications, Renewables and Environmental

Areas of Expertise

Facial Recognition, solid-state devices, Digital Image Processing, Wireless Communications, optical communication, security technologies

Affiliations

Institute of Electrical and Electronics Engineers (IEEE), IEEE Signal Processing Society, IEEE Photonics Society, International Society for Optics and Photonics , Institution of Engineers, Bangladesh Electronics Society , Bangladesh Computer Society

Sample Talks

Optical Pattern Recognition and Security Systems

Optical pattern recognition and security techniques employ optical light source, lenses and other optical components to process the images in parallel for correlation decision, which makes them ideal candidates for real-time pattern recognition system. A phase-shifted and phase-encoded fringe-adjusted joint transform correlation (SPFJTC) technique is developed, which can detect multiple targets in one processing step and ensures better utilization of the space-bandwidth product (SBP) resource by generating one correlation peak per target. This technique is found to be efficient with variable number of targets and even in the presence of noise in the input scene. The SPFJTC technique is extended to color pattern recognition system to utilize color of the target objects as additional feature to the spatial characteristics. Color pattern recognition technique has also been extended to multispectral system, where the images are recorded at several light wavelengths, which introduces additional feature to the target detection process. In addition to pattern recognition applications, the SPFJTC technique has been employed for securing confidential information by incorporating nonlinear encryption. This presentation will introduce the optical pattern recognition and security systems along with challenges and future directions.

Event Appearances

“Optical security system employing shifted phase-encoded joint transform correlation and orthogonal code”

10th International Conference & Expo on Emerging Technologies for a Smarter World (CEWIT 2013)

“Enhanced information security employing orthogonal code, steganography and joint transform correlation”

Proceedings of SPIE in Optical Pattern Recognition XXIV

“Efficient and robust information security system employing color encoded steganography and orthogonal encryption”

10th IASTED International Conference on Visualization, Imaging and Image Processing

“Color image encryption using multiple reference joint transform correlation”

8th IEEE Long Island Systems, Applications and Technology Conference

“A biometric-based secure architecture for mobile computing”

8th IEEE Long Island Systems, Applications and Technology Conference

“Encryption and multiplexing of fingerprints for enhanced security”

7th IEEE Long Island Systems, Applications and Technology Conference

“A secure approach for encryption and compressing biometric information employing orthogonal code and steganography”

SPIE in Optical Pattern Recognition XXIII

“Target tracking using log-polar transform-based shifted phase-encoded joint transform correlation”

SPIE in Optical Pattern Recognition XXV

“Modified local binary pattern (MLBP) for robust face recognition”
International Conference on Neural Computation Theory and Applications

“Distortion-invariant face recognition using multiple phase-shifted-reference based joint transform correlation”
SPIE in Optics and Photonics for Information Processing V

“Intelligent traffic light control system”
8th International Conference and Expo on Emerging Technologies for a Smarter World

“Modified local binary pattern (MLBP) for robust face recognition”
International Joint Conference on Computational Intelligence

“Learning by research: a review of undergraduate research experience in the School of Engineering Technology”
ASEE Mid-Atlantic Conference

Education

Muroran Institute of Technology
Doctor of Engineering Engineering (Electrical and Electronic)

Bangladesh University of Engineering and Technology
Master of Science in Engineering Engineering (Electrical and Electronic)

Bangladesh University of Engineering and Technology
Bachelor of Science in Engineering Engineering (Electrical and Electronic)

Accomplishments

“Strengthening the resources for Software Technology and Computer Security Technology programs to support Open SUNY Initiative”
“Strengthening the resources for Software Technology and Computer Security Technology programs to support Open SUNY Initiative”

“Establishing infrastructure, transportation and security center”
“Establishing infrastructure, transportation and security center”

enhancing student learning process through applied research projects in forensics and security imaging
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automatic human wound detection in warfield, US Army Medical Research and Material Command
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IEEE Region 1 Award

For outstanding service to the IEEE Long Island Systems Applications and Technology (LISAT) Conference while serving as its Publications Chairman

IEEE Long Island Section Outstanding Volunteer Award

For revitalizing the Photonics Society chapter and leadership in many other Section activities

Individual Development Award Program (IDAP) Award

State of New York/United University Professions Joint Labor-Management Committee award for research presentation

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