

SPECIAL ISSUE

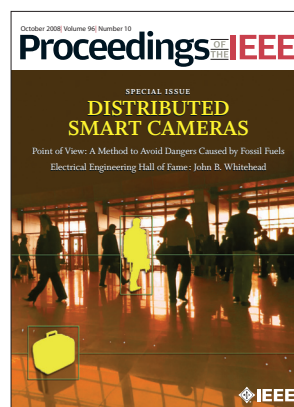
DISTRIBUTED SMART CAMERAS

Edited by B. Rinner and W. Wolf

- 1565 An Introduction to Distributed Smart Cameras**
By B. Rinner and W. Wolf
 | INVITED PAPER | Smart camera systems are designed to produce data, and to recognize and report on objects and activities of interest, rather than to capture images.
- 1576 The Signal Passing Interface and Its Application to Embedded Implementation of Smart Camera Applications**
By S. Saha, S. Puthenpurayil, J. Schlessman, S. S. Bhattacharyya, and W. Wolf
 | INVITED PAPER | A flexible, optimized communications interface suitable for smart camera systems has been demonstrated in systems for matching facial images and for efficient compression of speech.
- 1588 Wireless Multimedia Sensor Networks: Applications and Testbeds**
By I. F. Akyildiz, T. Melodia, and K. R. Chowdhury
 | INVITED PAPER | Network testbeds allow the effectiveness of algorithms and protocols to be evaluated by providing a controlled environment for measuring network performance.
- 1606 Object Detection, Tracking and Recognition for Multiple Smart Cameras**
By A. C. Sankaranarayanan, A. Veeraraghavan, and R. Chellappa
 | INVITED PAPER | Efficient distributed algorithms defined for small networks of fixed cameras may be adaptable to larger networks with mobile, steerable cameras.
- 1625 Calibrating Distributed Camera Networks**
By D. Devarajan, Z. Cheng, and R. J. Radke
 | INVITED PAPER | Individual cameras estimate the position, orientation and focal length of neighboring cameras, and a distributed system-wide algorithm refines these estimates to produce accurate calibration.
- 1640 Smart Camera Networks in Virtual Reality**
By F. Qureshi and D. Terzopoulos
 | INVITED PAPER | Simulated smart cameras track the movement of simulated pedestrians in a simulated train station, allowing development of improved control strategies for smart camera networks.
- 1657 Macroscopic Human Behavior Interpretation Using Distributed Imager and Other Sensors**
By D. Lymberopoulos, T. Teixeira, and A. Savvides
 | INVITED PAPER | Cameras in an assisted-living home monitor human activity to automatically detect and notify the staff when abnormal events take place.

DEPARTMENTS

- 1559 POINT OF VIEW**
 A Method to Avoid Dangers Caused by Fossil Fuels
By J.-I. Nishizawa
- 1562 SCANNING THE ISSUE**
 A Bright Future for Distributed Smart Cameras
By B. Rinner and W. Wolf
- 1733 SCANNING OUR PAST**
 Electrical Engineering Hall of Fame:
 John B. Whitehead
By J. E. Brittain
- 1736 FUTURE SPECIAL ISSUES/SPECIAL SECTIONS**



On the Cover: Our cover this month suggests one of many potential applications for Distributed Smart Cameras, this one in an airport security environment.

[Continued on page 1558 >]

SPECIAL ISSUE: DISTRIBUTED SMART CAMERAS

1678 Security and Privacy in Distributed Smart Cameras

By *D. N. Serpanos and A. Papalambrou*

| INVITED PAPER | To guarantee data authenticity and protect sensitive and private information, a wide range of mechanisms and protocols should be included in smart camera system design.

1688 Smart Cameras and the Right to Privacy

By *W. H. Widen*

| INVITED PAPER | Designs that take account of existing norms of privacy minimize the likelihood of triggering an outcry for legal change to prohibit or restrict use of smart camera systems.

1698 Smart Camera Based Monitoring System and Its Application to Assisted Living

By *S. Fleck and W. Straßer*

| INVITED PAPER | Video analysis algorithms replace human operators in a practical prototype system that attempts to respect privacy while detecting residents who fall.

1715 Real-Time Human Pose Estimation: A Case Study in Algorithm Design for Smart Camera Networks

By *C. Wu and H. Aghajan*

| INVITED PAPER | Distributed algorithms promise to allow smart camera networks to automatically and accurately detect body parts and movements, and to analyze and identify human activities.

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