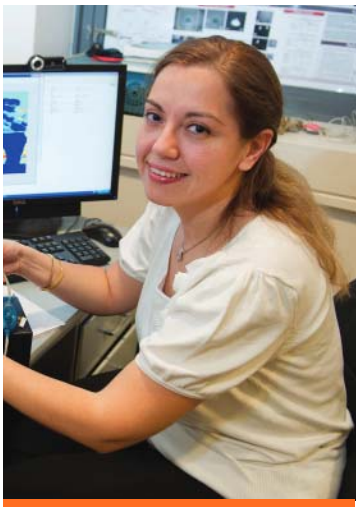

healthcare

military surveillance

monitoring

security

traffic systems

transportation

SENEM VELIPASALAR

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Dr. Velipasalar directs the state-of-the-art Smart Vision Systems Laboratory and has in-depth experience in wireless embedded smart cameras. These stand-alone, battery-operated units combine sensing, processing and communication in a single embedded platform. The lab focuses on designing resource-efficient algorithms that are suitable for embedded platforms, target detection and tracking, resource allocation strategies and detection of events of interest on embedded smart cameras. Dr. Velipasalar has two patents on spatio-temporal event detection and automatically tracking moving entities entering or exiting a specified region.

Education:

2007 Ph.D. Electrical Engineering, Princeton University

2004 M.A. Electrical Engineering, Princeton University

2001 M.S. Electrical Sciences and Computer Engineering, Brown University

1999 B.S. Electrical and Electronics Engineering, Bogazici University, Turkey

Recent Research Projects:

Smart Cameras Getting Smarter: Detecting High-level Events Across Battery-powered Wireless Embedded Smart Cameras. National Science Foundation CAREER Award. PI: Velipasalar, S.

The objective is to build a battery-powered, self-adapting, wireless embedded smart camera system for the detection of semantically high-level events, which can span multiple overlapping or non-overlapping camera views, in a scalable and energy-efficient manner, and remove the dependence on wired links.

Cooperative Activity Analysis in Wireless Smart-Camera Networks (Wi-SCaNs). National Science Foundation. PI: Velipasalar, S. Co-PI: Gursoy, M.C.

This project takes a holistic view of the problems that need to be solved to build scalable, battery-powered wireless smart camera networks (Wi-SCaNs). It focuses on providing a unifying solution to perform tasks distributively, and communicate in a P2P fashion over wireless links while making efficient use of limited resources, such as energy and bandwidth. The expected outcomes of this project include light-weight vision algorithms that are portable to embedded smart cameras, characterization of the energy-bandwidth-delay tradeoffs in Wi-SCaNs, efficient resource allocation strategies, and P2P wireless communication protocols that leverage the knowledge of the wireless channel conditions.

Recent Scholarship:

Casares, M. and S. Velipasalar, **"Adaptive methodologies for energy-efficient object detection and tracking with battery-powered embedded smart cameras,"** *IEEE Transactions on Circuits and Systems for Video Technology,* vol. 21, pp. 1438-1452, Oct. 2011.

Wang, Y., S. Velipasalar, and M. Casares, **"Cooperative object tracking and composite event detection with wireless embedded smart cameras,"** *IEEE Transactions on Image Processing,* vol. 19, pp. 2614-2633, Oct. 2010.

SU ADVANCE

Syracuse University is driven by its vision, Scholarship in Action—a commitment to forging bold, imaginative, reciprocal, and sustained engagements with partners from all sectors of the economy: public, private, and non-profit. These profiles have been developed to facilitate cross-sector connections and are supported by the SU ADVANCE project with funding from the National Science Foundation under NSF Grant No. HRD-1008643.