Abstract

This talk will survey our group's work over the past decade on distributed smart cameras that perform real-time computer vision. We will start with single-node smart cameras and describe how we worked at a variety of levels of abstraction—computer vision algorithms, embedded software, hardware—to design smart cameras that perform computer vision tasks in real time. We will also discuss our work on architectures for computer vision and design methodologies. We will go on to describe our work on distributed smart cameras that cooperate to analyze larger scenes without requiring the use of a central server. We will also describe our decade-long effort to commercialize this technology. We close with a look ahead to next-generation distributed smart cameras that operate at ultra low energy levels.

Bio

Marilyn Wolf is the Rhesa “Ray” S. Farmer Distinguished Chair and Georgia Research Alliance Eminent Scholar at the Georgia Institute of Technology. She received her BS, MS, and PhD in electrical engineering from Stanford University in 1980, 1981, and 1984, respectively. She was with AT&T Bell Laboratories from 1984 to 1989. She was on the faculty of Princeton University from 1989 to 2007. Her research interests included embedded computing, embedded video and computer vision, and VLSI systems. She has received the ASEE Terman Award and IEEE Circuits and Systems Society Education Award. She is a Fellow of the IEEE and ACM and an IEEE Computer Society Golden Core member.