# UNIVERSITY OF CENTRAL FLORIDA

## CENTER FOR RESEARCH IN COMPUTER VISION

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### "Peano Curves and *-Trees for Computations on Large Images"
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### ABSTRACT [1]

Highly affordable and high-density image sensors in ubiquitous and persistent imaging applications have intensified the need for innovative processing of very large images, and image archives, under different size/weight/power and throughput specifications. The motion analysis models and the required distributed high performance computations pose a need for representation of large data that captures both locality in data and recursive decomposition of the data domain to suit divide and conquer paradigms. Peano curves ~ a family of space filling curves that can be embedded in two and higher-dimensional bounded spaces – offer a set of attractive features. Image data compression and content based image retrieval among others have been tried successfully using a variety of tree-representations built on top of peano scanned images. The presentation will highlight the features, and the insights based on case studies.

### BIOGRAPHY

Guna Seetharaman is currently a Principal Engineer of Computing Architectures, at the Information Directorate, Air Force Research Laboratory. He is the Chair of IEEE Mohawk Valley Section. He held tenured academic positions at the Air Force Institute of Technology, and University of Louisiana at Lafayette, before joining the Lab. He was also a CNRS Visiting Professor at the University of Paris-XI. He earned his PhD in electrical and computer engineering in 1988, from University of Miami, FL. He is a founding member of Team CajunBot – and fielded two fully autonomous cars in the DARPA Grand Challenge. He has published more than 150 peer reviewed technical articles. His current research is focused on high performance computing, computer vision, and information exploitation.

[1]**Disclaimer:** All views expressed in this presentation are that of the author and his collaborators, and do not represent or reflect the policies and priorities of his employer.