KEYNOTE TALK

Tuesday, October 5, 2021 at 1:30pm

Direct estimation of appearance models for image segmentation

Pedro Felzenszwalb
Brown University
USA

Abstract: Image segmentation algorithms often depend on appearance models that characterize the distribution of pixel values in different image regions. We describe a novel approach for estimating appearance models directly from an image, without explicit consideration of the pixels that make up each region. Our approach is based on algebraic expressions that relate local image statistics to the appearance models of spatially coherent regions. The approach leads to two different algorithms for estimating appearance models. We present experimental results that demonstrate the proposed methods work well in practice and lead to effective image segmentation algorithms.

Speaker Bio-Sketch: Pedro Felipe Felzenszwalb received the BS degree in computer science from Cornell University in 1999. He received the MS and PhD degrees in computer science from MIT in 2001 and 2003. His main research interests are in computer vision, geometric algorithms and artificial intelligence. He was a professor of Computer Science at the University of Chicago from 2004 to 2011. He joined Brown University in 2011, where he is currently a Professor of Engineering and Computer Science. His work has been supported by the National Science Foundation, including a CAREER award received in 2008. He received the Longuet-Higgins Prize for a fundamental contribution to computer vision in 2010 and 2018. He is also the recipient of an IEEE Technical Achievement Award and the 2013 ACM Grace Murray Hopper Award.