



香港浸會大學  
HONG KONG BAPTIST UNIVERSITY  
計算機科學系  
Department of Computer Science

# Department of Computer Science Distinguished Lecture Series 2016/17

**Prof. Anil K. Jain**

University Distinguished Professor  
Department of Computer Science and Engineering  
Michigan State University



**19 June 2017 (Monday)  
4:30 - 5:30pm**

LT2 (SCT502),  
Cha Chi-ming Science Tower,  
Ho Sin Hang Campus, HKBU



## Face Clustering at Scale

### Abstract

Given a large collection of unlabeled face images, we address the problem of clustering faces into an unknown number of identities. This problem is of interest in social media, law enforcement, and other applications, where the number of faces can be of the order of hundreds of million, while the number of identities (clusters) can range from a few thousand to millions. To address the challenges of run-time complexity and cluster quality, we present an approximate Rank-Order clustering algorithm that performs better than popular clustering algorithms (k-Means and Spectral). Our experiments include clustering up to 123 million face images into over 10 million clusters. Clustering results are analyzed in terms of external (known face labels) and internal (unknown face labels) quality measures, and run-time. Our algorithm achieves an F-measure of 0.87 on the LFW benchmark (13K faces of 5,749 individuals), which drops to 0.27 on the largest dataset considered (13K faces in LFW + 123M distractor images). Additionally, we show that frames in the YouTube video benchmark can be clustered with an F-measure of 0.71. An internal per-cluster quality measure is developed to rank individual clusters for manual exploration of high quality clusters that are compact and isolated.

### Biography

Anil Jain is a University distinguished professor in the Department of Computer Science and Engineering at Michigan State University. His research interests include pattern recognition and biometric authentication. ISI has designated him as a highly cited author. He is a Fellow of the ACM and IEEE and is a recipient of Guggenheim, Humboldt and Fulbright awards. Anil served as the editor-in-chief of the IEEE Transactions on Pattern Analysis and Machine Intelligence, a member of the United States Defense Science Board and a member of the Forensic Science Standards Board. He is a member of the United States National Academy of Engineering and Foreign Fellow of the Indian National Academy of Engineering.

### Enquiry

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