## **KEYNOTE TALK**

## Wednesday, October 7, 2020 at 1:30pm

## **Understanding Visual Appearance from Micron to Global Scale**

## Kavita Bala Cornell University USA

**Abstract:** Augmented reality/mixed reality (AR/MR) technologies are poised to create compelling and immersive user experiences by combining computer vision and computer graphics. Imagine users interacting with the world around them through their AR device. Visual search tells them what they are seeing, while computer graphics augments reality by overlaying real objects with virtual objects. AR/VR can have a farranging impact across many applications, such as retail, virtual prototyping, and entertainment.

In this talk, I will describe my group's research on these complementary areas: graphics models for realistic visual appearance, and visual search and fine-grained recognition for scene understanding. We will also see how these technologies can go beyond AR/VR applications to enable visual discovery—using recognition as a core building block, we can mine social media images at a global scale to discover visual patterns and trends across geography and time.



**Speaker Bio-Sketch:** Kavita Bala is the Dean of Computing and Information Science at Cornell University. She received her S.M. and Ph.D. from MIT, her B.Tech. from IIT (Bombay), co-founded GrokStyle (acquired by Facebook), and served as the Chair of the Computer Science department at Cornell. Bala specializes in computer vision and computer graphics, leading research in recognition and visual search; physically-based scalable rendering; material modeling and acquisition; and human perception. Bala has authored the graduate-level textbook "Advanced Global Illumination", and has served as the Editor-in-Chief of Transactions on Graphics (TOG), and as chair of SIGGRAPH Asia Papers in 2011. She is an ACM Fellow (2019), and the 2020

recipient of the ACM SIGGRAPH Computer Graphics Achievement Award.