Motion is a key element of visual storytelling as it conveys the essence of a scene and the underlying story. Motion capture is a common technique to measure such motion and has been used professional in various areas including movie production, biomechanics and robotics. Unfortunately, motion capture systems often require special settings and a complicated calibration process, which therefore makes motion capture inaccessible to ordinary people.

In this talk, I will present novel inside-out and outside-in approaches for motion capture systems. The outside-in approach makes use of traditional capture settings by reconstructing dynamic objects from image sequences randomly taken in space and time, while the inside-out approach reverses the capture settings by outfitting an actor with wearable cameras. These approaches lead to significantly reduced complexity in relation to traditional motion capture settings, yet achieve reasonable motion reconstruction. I will also present applications of motion capture for interactive content creation such as 3D character modeling and animation design for animated films, which open up the range of possibilities of motion capture.