Abstract:

Faces are undoubtedly one of the most rigorously studied object classes in computer vision and recognizing faces from their pictures is one of the classic problems of the field. Fueled by applications ranging from biometrics and security to entertainment and commerce, massive research efforts were directed at this problem from both academia and industry. As a result, machine capabilities rose to the point where face recognition systems now claim to surpass even the human visual system. My own work on this problem began nearly a decade ago. At that time, the community shifted its interests from the (largely) solved problem of recognizing faces appearing in controlled, high quality images to images taken in the wild, where no control is assumed over how the faces are viewed. In this talk, I will provide my perspectives on this problem and the solutions proposed to solve it. I will discuss the rationale which drove the design of our methods, their limitations, and breakthroughs. In particular, I will show how classical computer vision methods and, surprisingly, elementary computer graphics, work together with modern deep learning in the design of our state of the art face recognition methods.