

CNN BASED CROWD COUNTING AND DENSITY ESTIMATION

Mrs. V. Sowjanya

Assistant Professor, Department of C.S.E
Matrusri Engineering College, Hyderabad, India

Shimaqa Fatika, Dommati Swetha, Tuluma Aishwarya Laxmi

Student, Department of C.S.E
Matrusri Engineering College, Hyderabad, India

Crowd counting is the process of determining the total number of individuals present in a defined area. It is a fundamental task in numerous applications such as crowd management, public safety, and urban planning. Traditional methods of manual counting are labor-intensive, time-consuming, and prone to errors, prompting the need for automated and accurate solutions. In this paper, we propose the utilization of CSRNet, a Convolutional Neural Network tailored for Congested Scene Recognition, to address the challenges associated with crowd counting and density estimation. Our approach leverages a modified convolutional neural network architecture equipped with a density map to effectively estimate crowd density and count individuals within congested scenes. Despite common complexities such as partial occlusion and overlapping individuals, our model demonstrates robustness and accuracy. By processing input images to generate density maps, our CSRNet model facilitates precise people counting in diverse scenarios. Training and validation on the ShanghaiTech Dataset validate the reliability and performance of our proposed approach. Through the integration of advanced deep learning techniques, our approach offers a streamlined solution for crowd estimation, with broad applicability across various domains including event management, public safety, and urban infrastructure planning.