

# Computer Vision Course Project

## Topic Selection

### Team Members

- Chandan Kumar Reddy Mannem
  - Computer Science Graduate Student
  - Mobile: +1 (704) 490-5969
  - [cmannem@uncc.edu](mailto:cmannem@uncc.edu)
- Monesa Thoguluva Janardhanan
  - Computer Science Graduate Student
  - Mobile: +1 (704) 345-1586
  - [mthogulu@uncc.edu](mailto:mthogulu@uncc.edu)
- Sai Krishna Uddagiri
  - Computer Science Graduate Student
  - Mobile: +1 (248) 525-7025
  - [suddagir@uncc.edu](mailto:suddagir@uncc.edu)
- Aparajitha Sriram
  - Computer Science Graduate Student
  - Mobile: +1 (980) 729-3866
  - [asriram@uncc.edu](mailto:asriram@uncc.edu)

### Project Topic

We have chosen “**Crowd Counting**” as our topic for our Computer Vision project. Crowd Counting is a way of counting or estimating the number of entities or objects in a crowd.

The crowd counting mechanism can be used to estimate the number of people gathered for a public event or for a protest. The estimate can help regularize crowd movement and control the movement of people by preventing overcrowding, stampedes and can be used to plan for an evacuation route in cases of an emergency. Estimating the crowd at various time intervals of an event can give us valuable insights into the event itself like what were the times in the event that the audience found interesting or what parts were boring.

Another use case of crowd counting is in the advertising field where the estimate will be helpful in gauging the number of eyeballs an advertisement might have acquired at a particular event. It can also help finding patterns in customer movement in stores, which can be helpful in organizing merchandise and optimizing store layouts.

We are focussing on the crowd control use case. We are planning on using images as our primary data set for this project. We are planning on starting this with the JHU-CROWD++ dataset which is a large-scale unconstrained crowd counting dataset. However, we are on the lookout for more datasets. Our final demo will include our model identifying people from the images we feed and giving us an estimate of the crowd. We could do this for multiple images and consolidate it together in a video for presentation purposes. This can be further extended to detect crowd movement on a pre-recorded video or a live feed from a surveillance camera.