

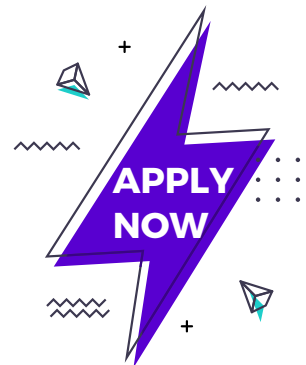


# CHALLENGE #50

## UTC-CVE-01

### Computer Vision at the Edge

Meet the expectations of this US Node through the technology challenge described below



## GOALS

We have developed a 2-kilometer urban corridor in downtown Chattanooga that consists of 10 signalized intersections. Each intersection is equipped with IoT devices (camera, LiDAR, air quality, and audio), wireless communication technologies (Wi-Fi, DSRC, 5G, and LoraWAN), and edge computers. This testbed is being used for several transportation-related projects that utilize the results of computer vision algorithms run in the cloud. An example of these projects is an initiative funded by the U.S. government to optimize traffic signal controllers using real-time traffic flow from computer vision metadata. All these projects use the existing fiber optic network to send data to UTC's data center (acting as a cloud) for processing. The goal of this challenge is to apply computer vision algorithms at the edge and compare the results with those executed in the cloud.

## DETAILS

Design computer vision algorithms that are optimized for resource restrained edge computers with performance suitable for dynamic systems, such as transportation, that require accurate real-time data.

## SKILLS REQUIRED

Object detection, Python, Edge Computing, Machine Learning.