SYNOPSIS

Computer Vision for Autonomous Vehicles
-Semantic Segmentation using Jetson Nano-

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KEY WORDS: *Semantic Segmentation, Fully-Convolutional Neural Networks*

Over the past 100 years, Automobile Industry has seen steady innovation with the help of Technology on par with other fields. Self-driven cars have taken the world by storm and its efficiency has been proved to be better than calculated. Despite its popularity, its yet to be tested and green-lit for Indian roads, and that's the motivation behind this project. This demonstration is a scaled down approach to the world of Computer vision that deals in Vehicle Automation.

The central processing unit of this project is NVIDIA Jetson Nano, it is a compact AI compute Module which can be used to learn and create intuitive Deep Learning based applications.
It delivers up to 472 GFLOPS of accelerated computing, can run many modern neural networks in parallel, and delivers the performance to process data from multiple high-resolution sensors.

The 3 concepts this project focuses primarily on, are:

- *Image Classification*: Classify the object (Recognize the object class) within an image.
- *Object Detection*: Classify and detect the object(s) within an image with bounding box(es)
- *Semantic Segmentation*: Classify the object class for each pixel within an image.

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