



# Centre of Excellence for Autonomous Vehicles Research

# What is ARC-AVR?

---

AVR is a Centre of Excellence for Autonomous Vehicles Research, equipped with state-of-the-art AI computers for Autonomous Vehicle and Electrical Vehicle Development- functioning under ARC i.e. Automotive Research Centre. It features a deep learning lab with the latest facilities, working in collaboration with NVIDIA corporation and State University of New York, Binghamton.

The center focuses on greener, energy efficient and comfortable automobiles. ARC is equipped with facilities related to automotive testing and development.

## What we do?

---

The main fields of research include Electric Vehicle, Hybrid Electric, Autonomous Vehicle, Automotive NVH, Vehicle Dynamics, I.C Engines, Smart Grid, V2X and Tribology. Our aim is to make strides in the field of AI and Deep learning to take the existing technology and ideas of the current industry leaders further.

We strive to revolutionize the market and enhance safety of a Level-5 Autonomous road-ready vehicle through our industry-leading research using high-end sensors. Our expertise includes- Computer Vision, Artificial Intelligence, UI/UX, E&E, vehicle design, control and navigation.

# Why should you JOIN US?

Over the years, the centre has evolved into a place for the next generation of researchers and developers to nurture their ideas and polish their skills. It is providing a platform for them to publish their ideas and bring them to life so as to spread awareness about this technology among the masses and make an impact in the real world.

## Our DEVELOPMENT

We have transformed a regular Auto Rickshaw into a completely functional electrical Auto Rickshaw.

Thanks to our partners, we have been able to install equipments like the Vortex full cab simulator, NVIDIA DGX1 server, NVIDIA drive pegasus, Velodyne lidars, pixhawk based drones in our centre. We are actively working to program and develop a fully autonomous vehicle using the data acquired and running simulations and test scenarios.

# Our TEAMS

The Autonomous Ground Vehicles research team consists of numerous departments that work in sync to ensure that every little detail is handled methodically. The goal is to introduce a unique approach to the field of self-driving automobiles.

1. **Computer Vision Team:** They are responsible for developing the vision for the machine. This serves as the eyesight of the driverless car.
2. **Interface Team:** For user-machine communication, a touchpad interface dash- board is provided which allows supervision over the vehicle's actions. The team is developing a user interface that is easy and intuitive to use while providing all the functionalities you could wish for in a car.
3. **LIDAR Team:** Light Detection and Ranging allows the vehicle to map the road and detect and avoid accidents. The team develops novel algorithms for LiDAR based localisation.
4. **Steering & Control Team:** This team's focus is on implementing solutions for the auton- omous vehicles' steering mechanism and control.
5. **Waypoint Navigation Team:** Responsible for developing smart algorithms using global and local positions of the vehicle which allows it to find its way and stay on route at all times.

## Our PARTNERS

---

**BINGHAMTON**  
UNIVERSITY

STATE UNIVERSITY OF NEW YORK



**nVIDIA®**

## Contact

---

Srivatsan: +91 9880320209

Prithviraj: +91 7795631099

 arc\_vit

 arcvitvellore

 company/arcvit

 ARC-VIT-Vellore-111442253611101