

Intel® Unnati
Data-Centric Labs in Emerging Technologies

Give Your Students the Intel Edge.

intel.

Today, there is a wide, and growing, skill gap between technical graduates and IT industry expectations. **To propel India's digital economy transformation, it is imperative that the higher education system in the country bridges this gap by developing new curricula and offering courses in emerging technologies.** The National Education Policy 2020¹ recognises this, and stresses the need for greater industry-academic linkages, and for higher education institutions to focus on research and innovation.

With the **Intel® Unnati Program**, you can keep pace with fast changing industry needs and expectations. It will help you:



Equip your students with industry relevant data-centric skills

In this age of data explosion, there is immense opportunity. Give your students the edge by equipping them with data-centric skills that will help them glean better insights and develop high-value solutions.



Unleash your students' creative potential

We, in India, have an incredible opportunity to unleash the creative potential of the largest student population in the world by training them in the right skills to drive India's digital transformation.



Build a strong reputation

With an Intel co-branded lab, you can be recognised as an institute that is committed

to train your students in the latest technology to prepare them for industry, and focus on faculty development.



Build capability for the long term

Establish your leadership and maintain it with the help of our System Integrator associates, who will get you Intel's recommendations for end-to-end Technology Labs set up, course content, and the training to go with it.



Leverage our System Integrator Associate Network

Be it training, customisations of your lab set up, or your maintenance and support requests, you can rely on our strong System Integrator Associate Network for all your needs.

¹Ministry of Human Resource Development, Government of India, National Education Policy 2020, https://static.pib.gov.in/WriteReadData/userfiles/NEP_Final_English_0.pdf

Intel® Unnati Smart Mobility

Why Smart Mobility?

The pressures of growing populations, increasing vehicle volume, and aging, physically constrained transportation infrastructure are creating an urban gridlock that impacts productivity, public safety, and public health.

Cities are using technology to improve traffic flow and public safety on existing roadways and extracting insights that are informing traffic engineering and infrastructure improvements.

Road Safety in the Indian Context

Per the Government of India's MyGov website¹, India still ranks first in the number of road accident deaths across 199 countries, and accounts for almost 11% of all accident-related deaths in the world. The Government is taking road safety as a top priority and is endeavouring to reduce road accidents by 50% by 2024; and it sees significant opportunities for the



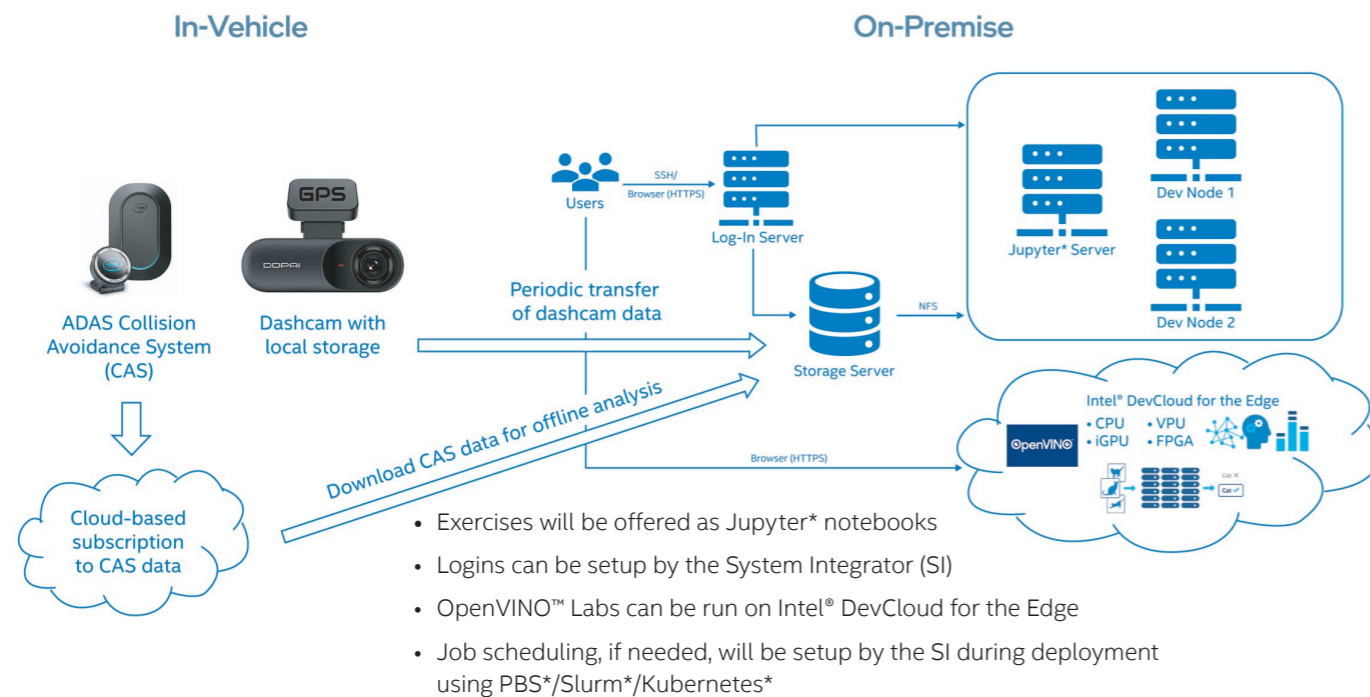
application of AI-driven technologies to remove human interference and the possibility of errors, thereby improving efficiencies and safety in traffic movement.

Advanced Driver Assistance Systems (ADAS)

ADAS systems are electronic systems that use AI and other advanced technologies to assist the driver. With features such as Collision Warning, Pedestrian Detection and Lane Departure Warning among others, these systems minimise human error and reduce road fatalities. With a vision of fewer crashes and mobility for all, Intel is developing ADAS systems as the building blocks for the future of autonomous driving

¹<https://www.mygov.in/campaigns/national-road-safety/>

High-Level Design



Key Benefits

For Institutions

- Build hands-on exposure to AI technologies driving Smart Mobility and next generation AI-based Mobility solutions
- Leverage Smart Mobility infrastructure across multiple engineering disciplines
- Learn about Indian datasets for AI and challenges in data collection
- Contribute to building India-specific datasets for Smarter and Safer Mobility (e.g., GreySpot map for India)

For Students

- How modern AI techniques are driving next generation vehicles
- How infrastructure safety can become more predictive with data
- How India can lead the world with unique AI datasets and applications

Suggested Lab Configuration



For institutions that are seeking to equip students from across engineering disciplines with foundational concepts of building Smart Mobility solutions with AI

Infrastructure	Minimum Suggested Configuration	
25 x Collision Avoidance Systems (CAS)	<ul style="list-style-type: none"> • Intel Onboard Smart Mobility Solution – SafetyPro – powered by Mobileye 8 Connect 	<ul style="list-style-type: none"> • Intel Onboard Cloud access for alerts • Cloud access to contribute to GreySpot Map
5 x Dashcams	<ul style="list-style-type: none"> • DDPAI Mola N3 Car Dash Camera with GPS Bracket, 2K+ 1600P UHD, 5MP, F1.8 Aperture, 140° Wide Angle, WiFi, 1GB RAM, 128GB Storage 	
3 x Nodes <i>Note:</i> You could use one node as the Jupyter* Server	<ul style="list-style-type: none"> • Dual Intel® Xeon® Gold 5318Y, 24 cores, 2.1 GHz base frequency, 36 MB cache • 256GB Memory: 16 x 16GB of 2993 MHz DDR4 ECC Registered Memory • 1TB SSD 	<ul style="list-style-type: none"> • Ubuntu* 18.04 • Intel® oneAPI Base Toolkit + Intel® AI Analytics Toolkit • Horovod* + Intel® MPI (if distributed DL training with TensorFlow*) • IPEx (Intel® Extension for PyTorch*) • Intel® Distribution of OpenVINO™ Toolkit <i>Note:</i> Check <i>oneContainer Portal</i>¹ for available AI containers Jupyter* Server • Ubuntu* 18.04 • JupyterHub* and JupyterLab* • Keras*, ipykernel*, Seaborn* + other libs as required
1-2 x GPU Card	Please contact your System Integrator for GPU recommendations.	
1 x Storage Server	<ul style="list-style-type: none"> • At least 2 TB space 	
1 x Log-In Server	<ul style="list-style-type: none"> • Intel® Xeon® Silver 4310, 12 cores, 2.1 GHz, 18 MB cache, 128 GB RAM, 500GB SSD 	<ul style="list-style-type: none"> • Ubuntu* 18.04
+ Network Router with 1Gbps Ports, Network Switch, Rack Cabinet, Power Delivery Unit (PDU), Patch Cables, an and Power Cable		
+ Software for job scheduling and queueing, if needed		
Note: OpenVino™ labs will be run on Intel® DevCloud for the Edge		

¹oneContainer Portal: <https://software.intel.com/containers>

To know more about how your institution can benefit from the Intel® Unnati Program, please contact:

