

**06**  
**MONTHS**

**ONLINE PROGRAM**

**PROFESSIONAL MASTER CERTIFICATION**  
**E-MOBILITY - COMMUNICATION,**  
**ARCHITECTURE and DIAGNOSIS**

**Certified By:**

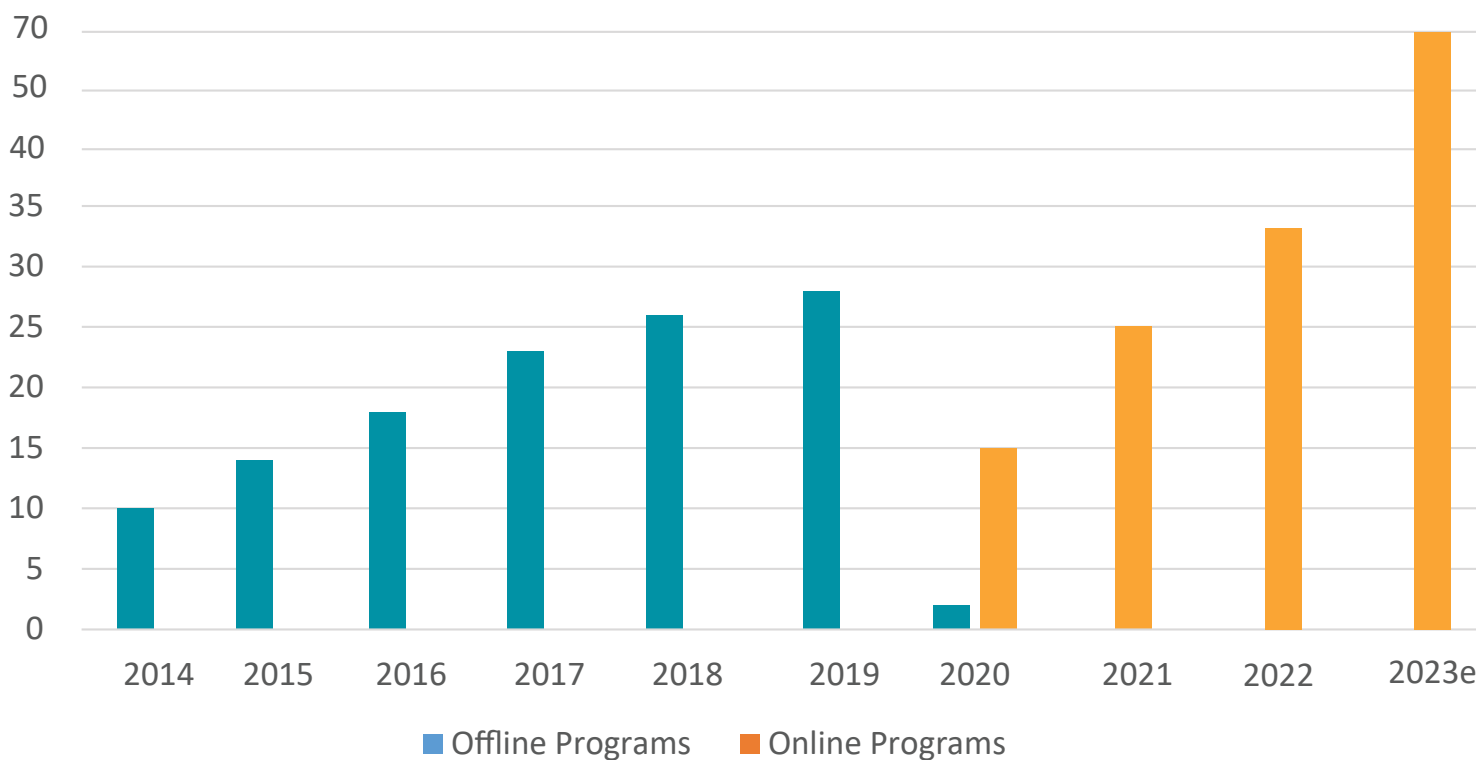


# ABOUT ISIEINDIA

ISIEINDIA is the most popular and favorite E-mobility Motor sports, Education and Research Publication organization in India among engineering institutes and green energy research organization. ISIEINDIA has become one of the epicenter of green energy concept development in India. We are motivating people (Engineers + Future Engineers) to work on New and Renewable Sources of Energy. We provide the platform to new start-ups, Innovative ideas and passionate people, who really want to contribute to society.

We are giving our innovative services to more than 50,000 + peoples. Our services and product have been appreciated and noted by delegates from 22 countries. We are an associate member of FMSCI. We have been awarded by National Youth Award by Ministry of Youth Affairs, and recommended by Ministry of New and Renewable Energy. ISIEINDIA is the 1st society in India which is motivating engineering students to work on commercial green Mobility.

## Program Delivered



The Skill Development Cell of Imperial Society of Innovative Engineers was established in 2015. Since, then we have delivered training in multiple domains of engineering such as - automobile, electric vehicle, computer science, electrical, electronics, etc. Since, its inception we have skilled and re-skilled more than 2.5 lac youths and professionals, helping them launch into a successful career in their desired domain.

SINCE 2015

**2.5** LAC+  
YOUTHS AND PROFESSIONALS  
TRAINED

# ABOUT PROGRAM

Professional Master Certification Programs are long term programs with 6 months of duration. These programs have been designed in order to make you employable and help you achieve that dream job. The courses under this program covers the in depth understandings of the topics covered, with 5+ case studies with mini and major projects.

The lectures will be provided on our Online platform, which can be accessed at any time as per your convenience.

We at ISIEINDIA believe that any lesson learnt is not useful unless you get to apply it in real time. Thus we have placed mini projects through out the course to help you get a proper understanding of the subject. The mini project will be briefed at the beginning of the subject and by the end of it you would have to submit the project. Apart from the mini projects you will also be provided with a major project that you would have to submit at the end of the course.



Placement Assistance



Industry Oriented Curriculum



Live Industrial Projects



Industrial Experts



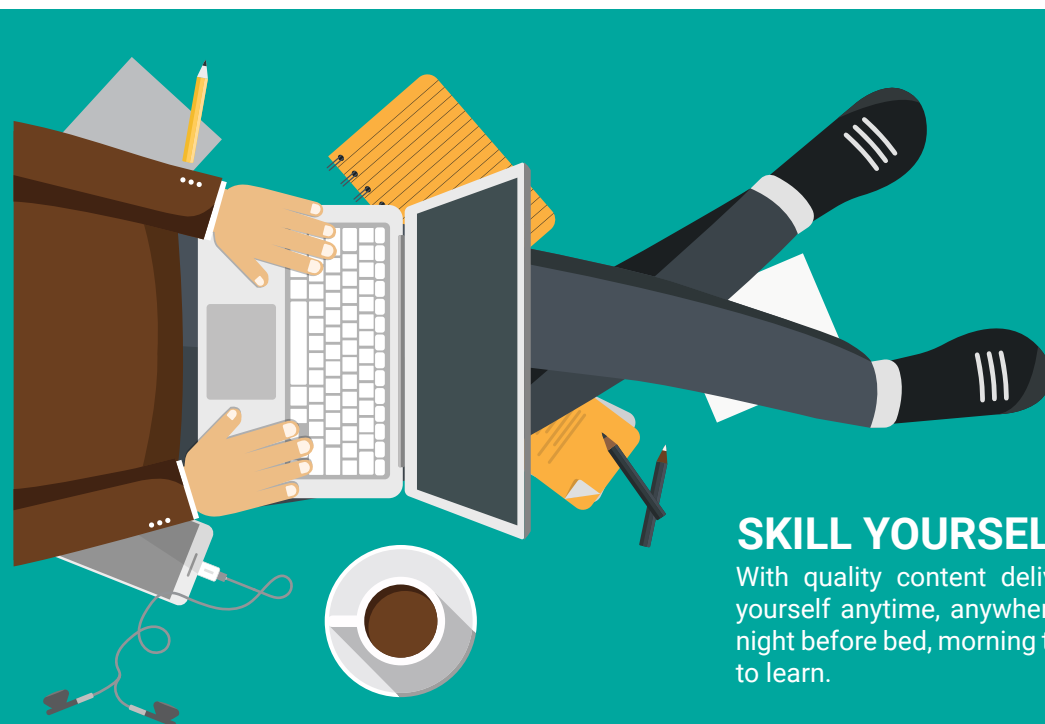
Live Doubt Sessions



Globally Valid Certificate



No Cost EMI



## SKILL YOURSELF ANYTIME, ANYWHERE

With quality content delivered at your screen, you can up-skill yourself anytime, anywhere. It could be during evening coffee, at night before bed, morning tea, during daily transit, you choose when to learn.





# E-MOBILITY - COMMUNICATION, ARCHITECTURE and DIAGNOSIS

Electric mobility comes with zero or ultra-low tailpipe emissions of local air pollutants and much lower noise, and, by being one of the most innovative clusters for the automotive sector, can provide a major boost to the economic and industrial competitiveness, attracting investments, especially in countries.

The Electric Vehicle industry in India is far behind, with less than 1% of the total vehicle sales. Currently, Indian roads are dominated by conventional vehicles and have approximately 0.4 million electric two-wheelers and a few thousand electric cars only. The Indian EV industry has been on the back seat due to various challenges. Also, the industry is in requirement of EV Professionals are in need of Skilled Professionals which will have the knowledge in a particular domain of Electric Vehicle. Delivering e-Mobility to the masses is not only a huge investment, but a significant operational undertaking. As OEMs, suppliers and emerging vehicle manufacturers invest billions to develop innovative electric vehicles, and optimize development and production processes, they are looking for a strategic partner to help realize their vision.

The course is fully Online mode, it includes 05 Subjects for the 200 learning hour. The course includes 20 assignments in total and it also includes assessments after completion of each module, based on which you will be provided with a global certificate.

# COURSE DETAILS

**05**  
SUBJECTS

**80+**  
LECTURE HOURS

**5+**  
CASE STUDIES

**01**  
PROJECTS

## SUBJECT 01

### Powertrain Selection and Industry Prospects

About EV Industry and Market Study  
EV Architectures and Types  
Powertrain Selection  
Model Based Simulation - Driving Cycle and Transmission Efficiency

## SUBJECT 02

### Electric Motor and Drive Methods

Motor Types for EV  
Motor Drive Methods  
Motor Design Parameters  
Controller Architecture and Communication  
Model Based Simulation - Motor Energy Consumption

## SUBJECT 03

### Power Unit Design and Safety

Cell Types and Characteristics  
Battery Pack Design and Cell Sorting  
BMS Design and Architecture  
Constructional and Functional Safety  
Model Based Simulation - Range Calculation

## SUBJECT 04

### Electric Vehicle Communication and Diagnostics

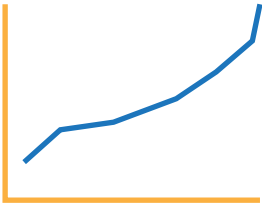
Embedded Systems in Electric Vehicle  
Vehicle Control Unit Architecture  
Communication Systems and Protocols  
Vehicle Diagnostics and Troubleshooting

## SUBJECT 05

### Electric Vehicle Charging Infra and Connected Technology

EVSE Systems and Types  
Charging Protocols  
Charging Stations and Challenges  
ADAS Systems  
Vehicle Connected Technology

# MAJOR CASE STUDIES



## EV Market Impact

The EV market has grown the most despite of COVID-19 situation in the past one year. In this we take a look at the various parameters affecting the EV market and how the government and manufacturers have joined hands to promote EV.



## BMS Architecture for EV

BMS Architecture types used for 2-Wheeler and 4-Wheeler operation and how the communication and data gathering is different in both cases. Battery pack safety measures and differences.



## EV Architecture

Various hybrid vehicle architecture and their significance with respect to the market demands. Comparison study of BMW i8, BMW i3, Toyota Prius and Hyundai Nexon to understand the suitable source of energy as well as a brief look into the F1 Hybrid Setup and how it has revolutionized the hybrid powertrain.



## Battery Charging vs Swapping

When it comes to EV design, it is really important to know which way to choose, battery swapping or charging as it will alter the design. Also take a look at case of Gogoro.

## CASE STUDY

The course is filled with case studies at every unit, explaining real world scenarios and their solutions. The studies mentioned above are the major case studies, associated with which are multiple minor case studies to help you gain more insight into the industry,



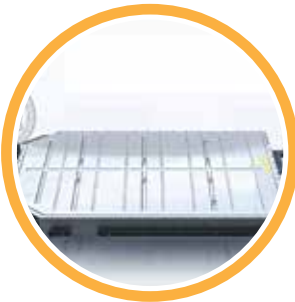
# PROJECTS

CHOOSE ANY ONE PROJECT



## Powertrain Efficiency of an EV

For a given electric vehicle create a mathematical model in order to simulate for the optimal efficiency of the system. Calculate and modify for an optimal efficiency or Wh/km energy consumption of the powertrain system.



## Battery Pack Management and DAQ

For a given performance criteria and charge and discharge cycle/ temperature profile of the battery pack choose a suitable management strategy for the system, and create the communication model for BMS with other components and data gathering system.



## VCU and Communication

Perform a complete simulation of vehicle control unit/ electronic control unit - for communication between high voltage components and loop. This is a model based simulation to understand the complete data gathering and communication system for an EV at vehicular level.

## ELIGIBILITY



**Graduates/ Post Graduates**



**Industry Professionals**



**Entrepreneurs looking for Startups**

## PAYMENT OPTIONS

### NO COST EMI

On following Banks Credit Card -

- American Express
- Yes Bank
- Standard Chartered Bank
- RBL Bank
- IndusInd Bank
- CITY Bank
- Axis Bank
- ICICI Bank
- Kotak Bank
- HDFC Bank
- Bank of Baroda



**Wallets**



**Credit/ Debit Card**



**Net Banking**



**EMI**



# CERTIFICATE

## ISIEINDIA GLOBAL CERTIFICATE



## NSDC CERTIFICATE

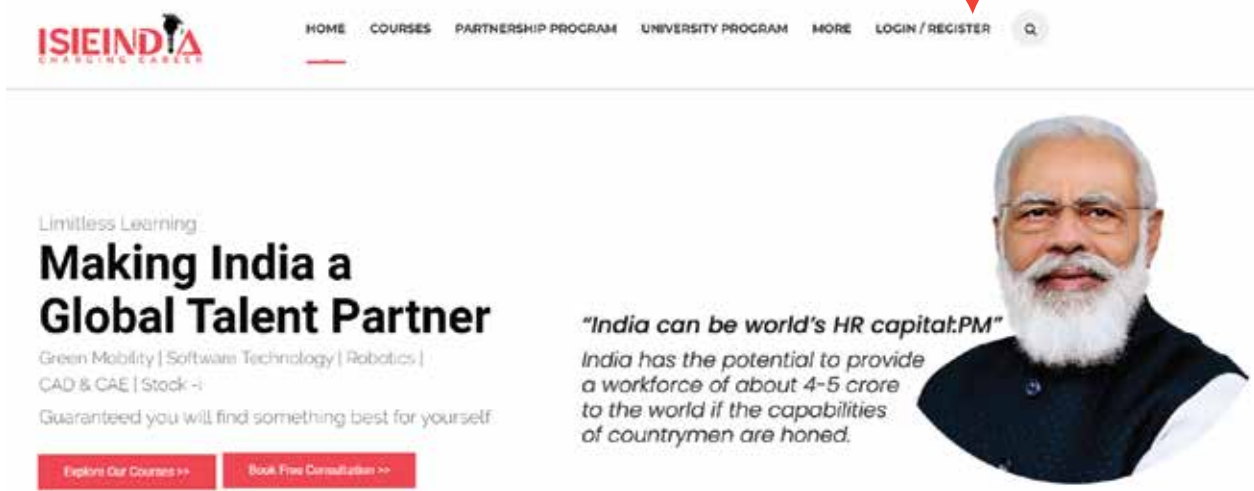


# HOW TO ENROLL

## STEP 1 - Sign up/ Register Yourself

1. Click on the "SIGN UP" button on the top right corner.

Click Here





2. Enter your details in the “Sign Up” panel and click on “Register”.




## STEP 2 - Browse and Buy Course

After Login. Click on - Browse Course -> Professional Master Certification Program -> EV

1. Visit the course page and click on learn more.

### Featured Programs for you



**EV Powertrain Architecture and Energy Storage System**


Get 100+ hours learning sessions, masterclass by industry experts & case studies  
Exposure to global job opportunities with timely doubt resolution

Batch Starts On  
July 31, 2023

Eligibility  
4 Yrs Proven Academic Term

[Download Brochure](#)

[Learn More](#)



**Electric Vehicle Design Simulation and Component Selection**


Get 100+ hours learning sessions, masterclass by industry experts & case studies  
Exposure to global job opportunities with timely doubt resolution

Batch Starts On  
July 31, 2023

Eligibility  
4 Yrs Proven Academic Term

[Download Brochure](#)

[Learn More](#)



**E-Mobility - Communication, Architecture and Diagnosis**

Get 100+ hours learning sessions, masterclass by industry experts & 20+ case studies  
Exposure to global job opportunities with timely doubt resolution

Batch Starts On  
July 31, 2023

Eligibility  
4 Yrs Proven Academic Term

[Download Brochure](#)

[Learn More](#)

Click Here

2. Click on “Get Course” to checkout.

The screenshot shows the ISIEINDIA website interface. At the top, there's a navigation bar with links: HOME, COURSES, PARTNERSHIP PROGRAM, and MORE. A user profile 'Hey, naveen' is logged in. The main heading is 'Electric Vehicle Design, Simulation and Component Selection'. Below it, there's a green 'GET COURSE' button with a price tag of ₹59,999. To the right, a sidebar lists course details: Enrolled: 64 students, Duration: 6 Month, Lectures: 203, Video: 200+ Hours, and Level: Advanced. The 'About the Program' section describes the course content, including Electrical Vehicle Design, Crashworthiness, Aerodynamics, Powertrain, Energy Storage System Design and Safety, and Homologation and Testing.

3. Enter Coupon Code if you have any. Click on “Proceed to checkout”.

The screenshot shows the checkout page. At the top, there's a table with columns: Delete, Product name, Price, Quantity, and Total. The table contains one item: 'Electric Vehicle Design, Simulation and Component Selection' with a price of ₹59,999.00 and a quantity of 1. Below the table, there's a 'Coupon code' input field with a red arrow pointing to it and the text 'Enter Coupon Code (if any)'. Underneath, the 'Cart totals' section shows a subtotal and total of ₹59,999.00. At the bottom, there's a blue 'PROCEED TO CHECKOUT' button with a red arrow pointing to it and the text 'Proceed to Buy the Course.'.

#### 4. Update the billing details”.

**Billing details**

First name \*

Last name \*

Company name (optional)

Country / Region \*

India

Street address \*

House Number and street name

Apartment, suite, unit, etc. (optional)

Town / City \*

State \*

Uttar Pradesh

Pin \*

Phone \*

Email address \*

**Additional information**


Order notes (optional)

Notes about your order, e.g. special notes for delivery.

Activate WhatsApp


Go to Settings

#### 5. On the payment page choose the mode of payment, and proceed with payment.




**ISIEINDIA**  
Order 13131  
₹ 59,999


English


 +918954111987 | isiehw@gmail.com


PREFERRED PAYMENT METHODS

 EMI - Use your saved cards >

CARDS, UPI & MORE

 Card  
Visa, MasterCard, RuPay & More

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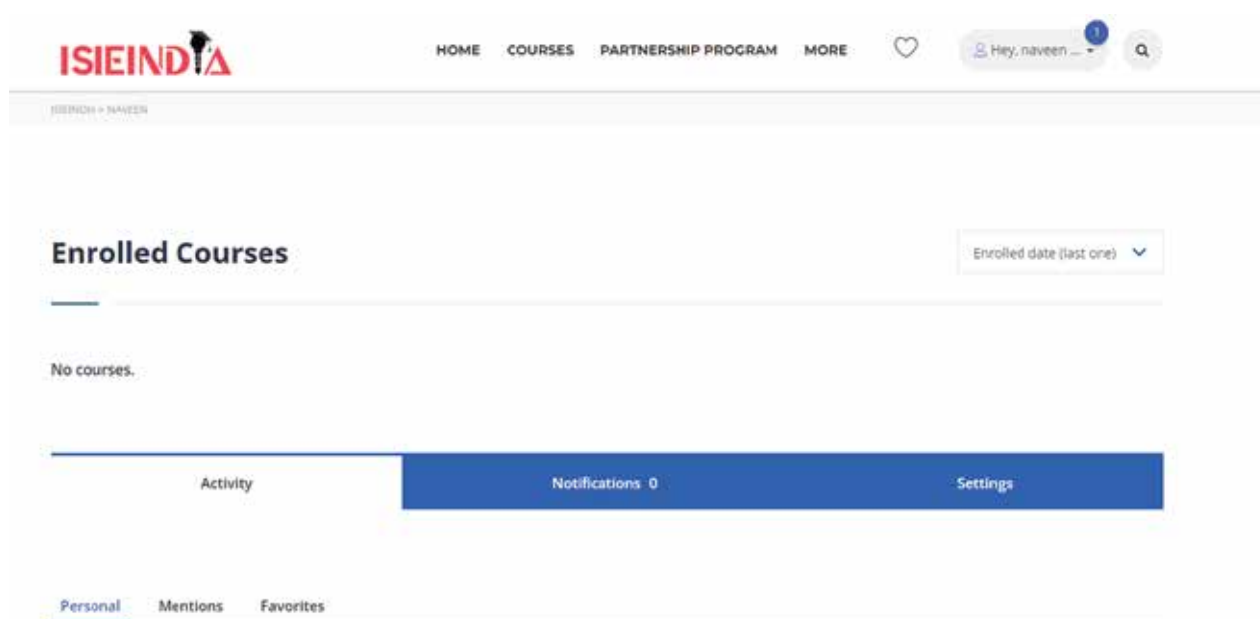
Select

www.isieindia.com

elearning@isieindia.com

+91-7428723984 | +91-9971621588

6. Go to My Account -> Enrolled Courses -> Select the course and UP-SKILL Yourself.

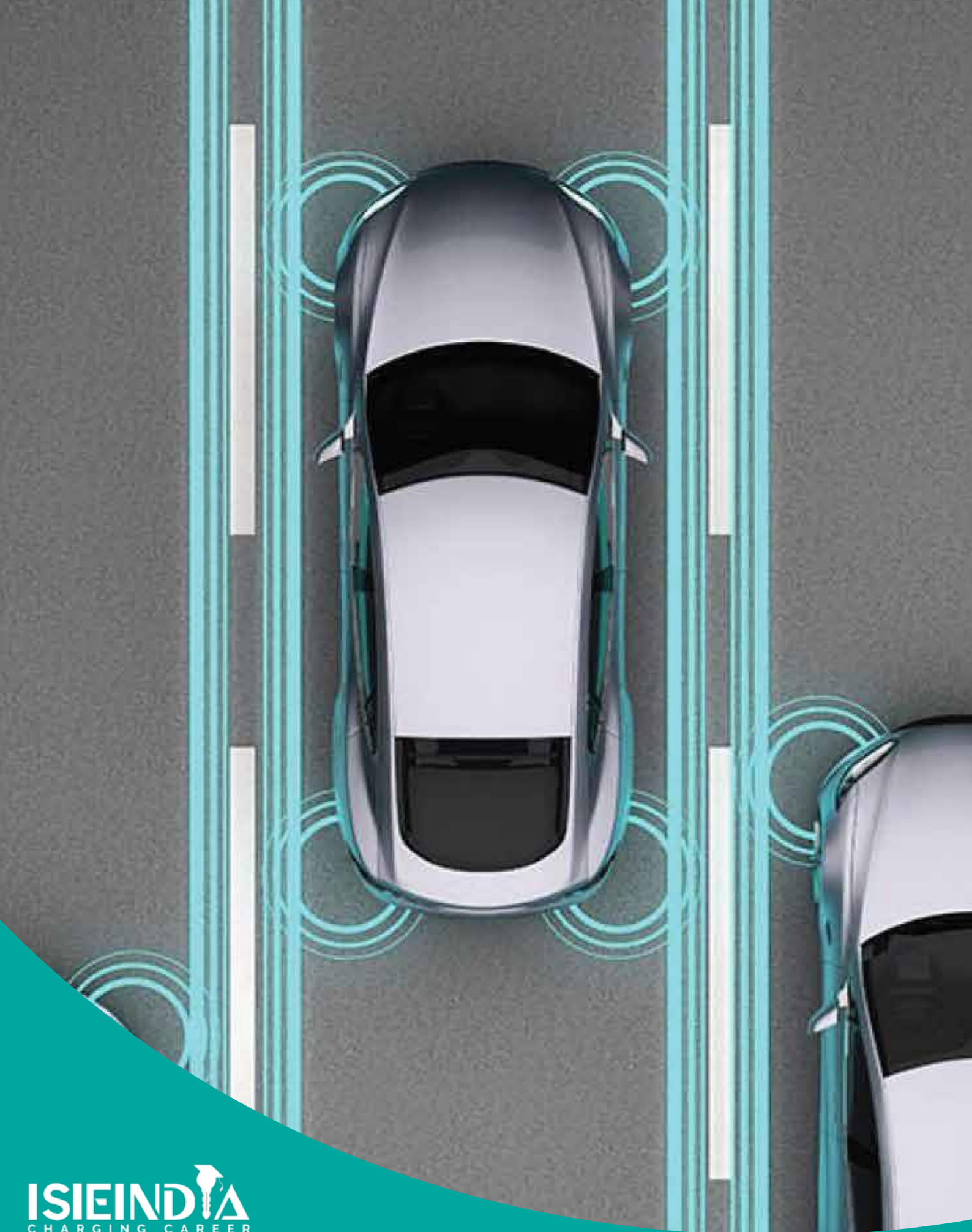


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