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WHAT IS LICENSE PLATE RECOGNITION?

Understand the science behind LPR/ANPR and how it's changing our lives

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Got It



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technology for vehicle management operations such as Ticketless Parking (off-street and on-street), Tolling, ITS, stolen vehicles detection, smart billing and many other applications in Europe and becoming a trend in the Americas.

By bringing the license plate digital information (among other data such as vehicle's direction and speed) to the mix, License Plate Recognition allows operators to immediately gather and associate **more data** about every vehicle passing a control point:

- **The action itself:** time, place, direction and speed of the vehicle
- **The vehicle:** origin, Restrictions or security alerts
- **The driver:** License number, personal public or contact information about the driver

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imagine a city that "knows" where every stolen or reported vehicle is, at any time.

How does License Plate Recognition work?

Once the [LPR camera](#) has captured the license plate image, its firmware uses license plate specialized OCR routines to translate it into **digital** (machine-readable) characters.

But License Plates are (very) different from each other; the characters don't look the same, not even close!

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To recognize a license plate correctly, we have to "teach" the algorithm to read different plate designs from different types of license plates; what may seem like an O in some plates looks like a 0 in others.

So LPR is about knowing each possible plate **variation** and reading the characters according to many regional modifications, the algorithm needs to know *"what to expect"*.

License Plate Recognition Phases

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**1 • Localization:**

Finding the License Plate within the whole image, disregarding unnecessary data and

**2 •****Segmentation:**

Separating the precise zone containing every character to identify

**3 •****Identification:**

Character recognition from the individual

**4 •****Regionalization:**

Regional Syntactical Correction to identify

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Building a License Plate recognition algorithm to understand all license plates is **hard work**: special characteristics of each region (country or state) must be considered for a proper final verdict; we do have to analyze every type of license plate available in the world and [integrate their particularities into our algorithm](#).

To make License Plate Recognition a reliable solution, we should get as close as we can to the **100% success rate** (accurate readings) in real-time; such achievement is beyond human programming capabilities:

Imagine perfectly and immediately recognizing every plate from every country in every angle possible

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precise.

The more readings we make, the more chance we can **correctly** read the license plate, helping us get closer to 100% accuracy.

How is License Plate Recognition helping us?

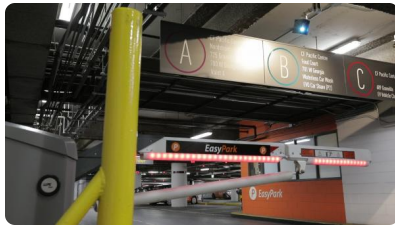
The License Plate data gathered in License Plate Recognition is being employed for a vast range of applications allowing companies and governments to make more intelligent and effective policies, provide better customer service and reduce air pollution at the same time.

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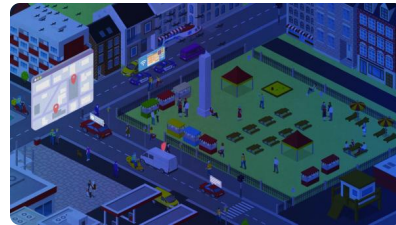
vehicles, on segways or fixed control points to detect stolen, wanted or uninsured vehicles.

possibilities to enhance capabilities and improve customer service.



Free Flow / Ticketless Parking

Touchless, frictionless & ticketless parking installations where parkers don't have to stop at barriers parkers to enter, pay or exit: a smoother, faster and cleaner parking



Smart Cities

Cities use License Plate Recognition to develop better policies based on a higher understanding of the traffic.



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License Plate recognition means better control at lower costs

The success of LPR lies in the fact that it brings **benefits to both** companies and their customers: Companies reduce costs and increase revenues while improving customers' experience thanks to a faster, frictionless, touchless parking service.

License Plate Recognition is THE cost-effective solution! It's easy to understand, let's compare:

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