Meep:

REVOLUTIONIZING URBAN MOBILITY WITH SMART ALGORITHMS

Although the first algorithms we know of date back to tablets from the Babylonian Empire, everything changed in 1843 when the mathematician **Ada Lovelace** proposed what is considered the first computer algorithm, i.e., the first algorithm that could be processed automatically by a machine.

More than a century later, the impact of **Artificial Intelligence** (the expression of the year 2022 according to Fundéu RAE), largely driven by ChatGPT, has ushered in the golden age of algorithms.

In this article, we will delve into **how algorithms are capable of significantly enhancing a person's urban mobility experience,** increasing transportation accessibility, and promoting the efficient utilization of existing mobilty resources.

THE IMPACT OF ALGORITHMS ON SOCIETY

What is the relationship between an algorithm and artificial intelligence? To create Artificial Intelligence, two essential foundations are required: algorithms and the data to configure them. The algorithm, in terms of programming, is a sequence of logical steps to solve a problem. It provides instructions for a machine to carry out the tasks we assign to it, while data allows that machine to learn how to employ those instructions and refine their usage.

Currently, we are surrounded by devices capable of executing numerous algorithms, although they remain invisible and incomprehensible to most. In fact, according to the exhibition **"Code and Algorithms: Meaning in a Calculated World"** at the Fundación Telefónica Space in Madrid, **it is estimated that only 0.3% of the population knows how to write or interpret them.**

However, **our daily lives are almost inconceivable without them**. Depending on how they are designed, they have the potential to **generate either positive or negative impacts** on a large scale. They suggest how to get from one place to another, what movie to watch,

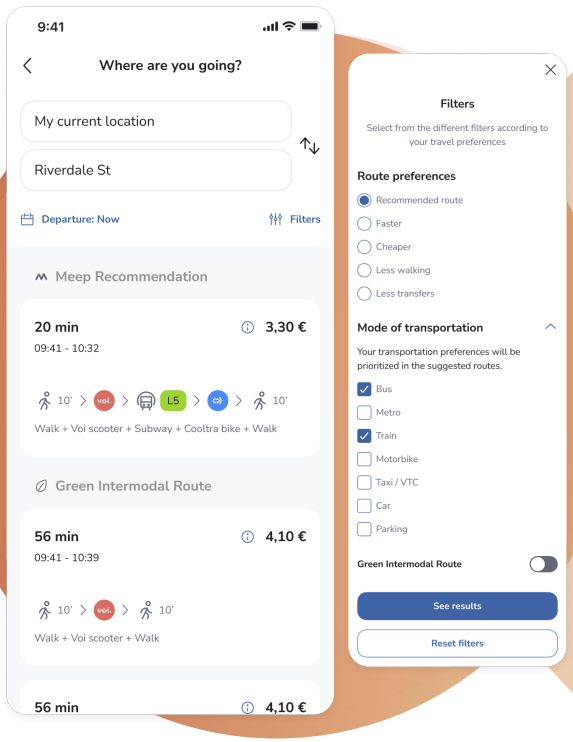
or how to translate a word. They can help us predict a stroke two years before it happens, select crops that adapt to climate change, or calculate the shape of 200 million molecules to understand diseases like Alzheimer's or Parkinson's.

Yet, we increasingly delegate decisions of greater significance to them, and for this reason, understanding how they work and the ethical challenges they pose is essential. This is what Israeli thinker **Yuval Noah Harari** aimed to achieve in his book "21 Lessons for the 21st Century," in which he warns of what may lie ahead: a world in which the most significant political, economic, and social decisions are made by complex computational calculations that very few truly comprehend, undermining individual freedom.

ROUTE PLANNING ALGORITHMS

Let's focus on one of the mentioned positive impacts of the algorithm: suggesting how to get from one place to another to make our lives easier.

Meep's connected mobility solution enables users to plan, book, and pay for their journeys seamlessly in a single application that integrates all available modes of transportation.



One of the app's features is the **multimodal route planner**, in which, thanks to an algorithm developed by Meep, it combines real-time information from different integrated mobility services.

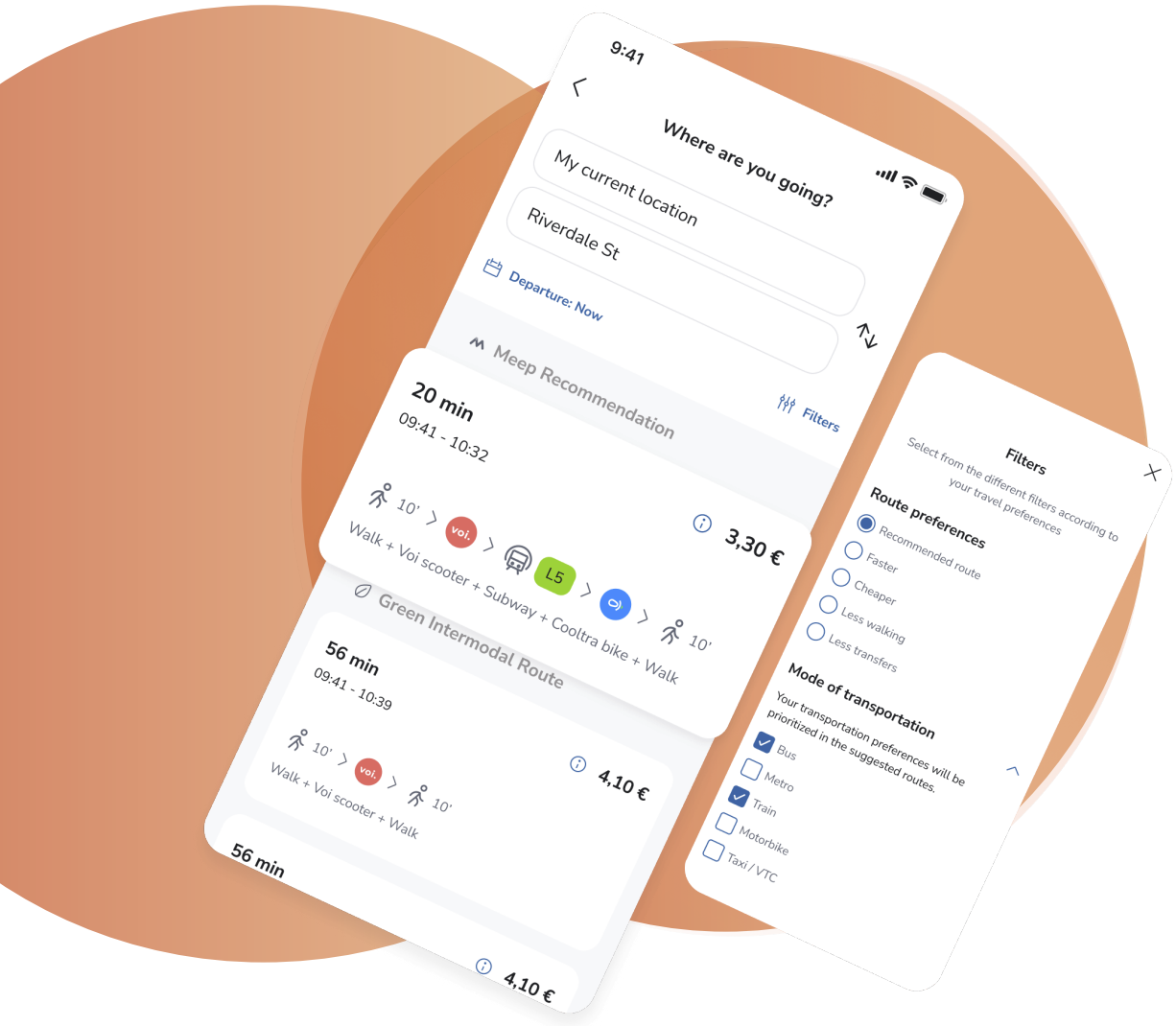
"Our algorithm creates intelligent intermodal routes that combine transportation networks that will be the future of mobility in cities," commented **Guillermo Campoamor, CEO & Co-founder of Meep**, in a recent interview.

HOW DOES THE MEEP ALGORITHM WORK?

The route planning algorithms are fed by various sources of information from the integrated regular transportation operators on the platform, where schedule information and sometimes prices are provided. It then updates this information with dynamic and real-time data from different sources:

- **Real-time updates** of stop times or service alerts for regular transportation operators.
- Updating information about resources in **sharing operators**: bicycles, scooters, motorcycles, electric vehicle charging stations, carsharing, etc.

In addition, the algorithm includes on-demand services such as Demand-Responsive Transport (DRT), ride-hailing, carpooling, airport transportation services, or shuttle services.



To address the problem of information dispersion, given the presence of multiple operators and types of operations, Meep organizes and structures the data obtained from different operators, providing a seamless experience to the user and allowing the incorporation of new operators without altering the already exposed API in similar operator types

To complete the user experience, the algorithm **tailors the results to the user's preferences** and the mobility options of their preferred operator. Users can choose to make their mobility experience more cost-effective, faster, healthier, or more sustainable. In other words, they can customize the algorithm to fit their way of getting around the city.

In conclusion, Meep has demonstrated how intelligent algorithms can transform urban mobility by offering a frictionless transportation experience. Its connected solution efficiently integrates various mobility services, adapting to the individual preferences and needs of users.

User preferences and priorities. In a modern world driven by artificial intelligence, understanding these algorithms and addressing their ethical challenges is essential for making technology-backed decisions that benefit everyone.

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