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Combining AI and Blockchain at Odyssey Hackathon

At the Odyssey Hackathon the Porsche Digital Lab Team envisioned a future with less hassle of owning and charging Electric Vehicles (EV's) by building local power communities.



What's a Hackathon?

At a hackathon, many coders, developers and white hat hackers meet to develop in a short but very intensive time, e.g. 48 hours at a time, a solution idea for any problem and directly develop a technical prototype. Often some project teams are awarded at the end. What is created in a hackathon by the free minds is outside of everyday work and projects, it can be out of the box ideas that are not developed further, or it can be the start of something big — Twitter was created that way.

The world's biggest Blockchain & AI hackathon took place in the Netherlands, in an old 'Suikerfabriek' in Groningen. The support of the city and government was great.

The Problem(s): Charging of EV's & needs of the grid



Climate change is dramatic and requires an immediate change in the way we handle the planet. Society has the interest to rethink mobility by pushing for more electric vehicles. In order to be able to make that change, improved access to charging infrastructure is urgently required.

The Solution: A smart and decentral charging & discharging solution

The customer and owner of an electric vehicle can always connect the vehicle to the charging infrastructure, even if the capacity of the electrical lines remains limited, and the number of EVs significantly increases. An intelligent software organizes the charging of all connected vehicles according to their usage profiles, to ensure every car is charged sufficiently when it is needed.

As community members give away control over the charging process, they receive a benefit in return, factually calculated as electricity price and kWh, but communicated as 'free driving for supporting the local community'.

We created the blueprint for a cooperative which helps local communities to take matters into their hands and get the required infrastructure in place. Together, members can participate in local communities for mobile power plants with their EV's batteries. Intelligent software manages the charging of cars based on the availability and price of electricity as well as the usage patterns detected for the cars.

If the AC frequency fluctuates outside the mobile power plant due to high energy demand, the plant may release surplus energy from the car's batteries, which exceeds the capacity needed according to estimated usage profiles. The participation in local flexibility markets provides an income to the community. As an incentive, this income is shared amongst members as "free miles" on their cars. The cooperative provides experience, partners, and software to local communities. If you live in a house with multiple parties, the interested parties may join your local community.



Karthick Perumal, Ingo Brenckmann, Claudio Weck, Desislava Belokonska and Jagrut Kosti (l.-r.)

The Tech ABC—smart Charging with AI in combination with Blockchain and the Cloud

Why did we do this and how?



Ingo Brenckmann, Karthick Perumal, Claudio Weck, Jagrut Kosti and Desislava Belokonska (l.-r.)

Info

Jagrut Kosti, Karthick Perumal, Ingo Brenckmann, Desislava Belokonska and Claudio Weck are Porsche Digital Lab Scientists and the winning team behind “HorsePower” during the Odyssey Hackathon 2019.



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