Inspiration

A challenge that concerns any city with automobile traffic is the safety of every type of transport, consideration of different physical and mental disabilities and keeping traffic fluid despite these challenges. In order to take one more step towards an intelligent, respectful et efficient city, an AI-powered, handicap-conscious approach to transportation.

What it does

Our system implements RFID scanning to collect data on pedestrian traffic, which is then used to train a machine learning model, which in turn logs inferences of necessary pedestrian light delay depending on date and type of user.

These inferences are, in turn, taken from the database when there is a related request and relayed to the traffic light module in time for the requesting party to have an adequate delay for their traversal.

How we built it

Everything closely related to the API was built in a .Net environment. An ASP.Net API, Code-First SQL Server database using EntityFrameworkCore, ML.Net for machine learning.

For our physical proof of concept, we used an ESP32 with a RFID-RC522 module. Using the Arduino DOIT Devkit, we wrote the necessary C++ code to make API GET requests on RFID reads to receive the necessary data to adjust our traffic/pedestrian light timings.

Challenges we ran into

Obtaining the necessary materials despite time constraints, limiting the project’ size to make sure we could present a proof-of-concept in less than 48h.

Accomplishments that we're proud of

What we learned