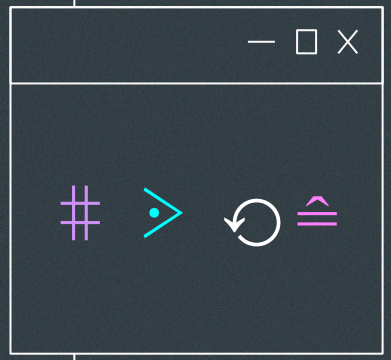
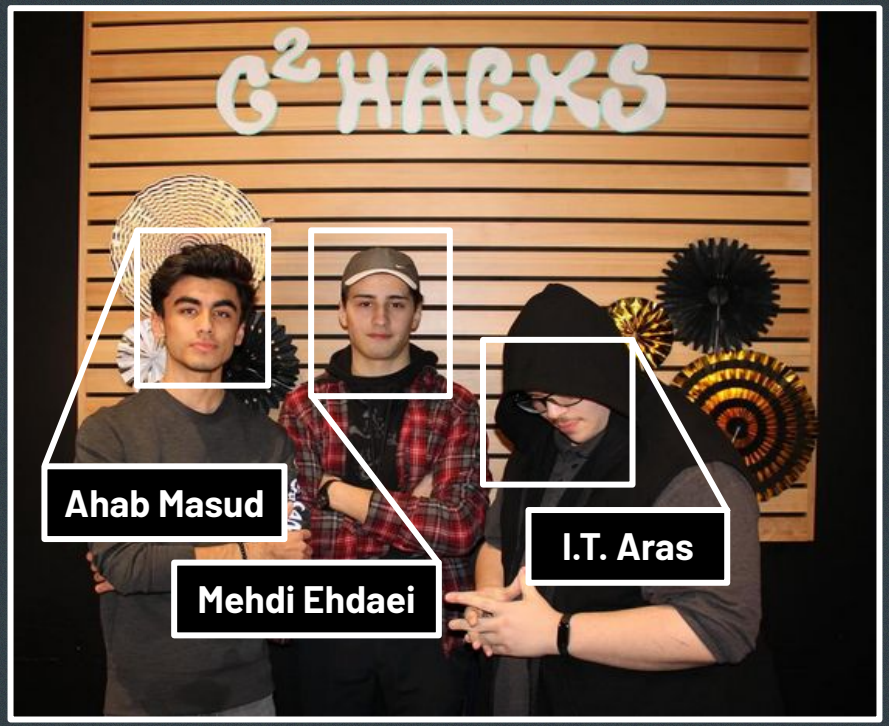
# sustainable AI-powered traffic congestion solution

ibrahim aras, ahab siddiqui, mehdi ehdaei



# the team



# everyday real-world problems

energy waste

- traffic jams result in vehicles idling, wasting fuel, and increasing greenhouse gas emissions

lost productivity

- long commutes reduce work-life balance and lead to billions of dollars in lost productivity annually

key message

- everyday problems like traffic congestion make our lives more complex, inconvenient, and stressful

# how machine learning optimizes our lives

machine learning is transforming various fields by uncovering hidden patterns and correlations

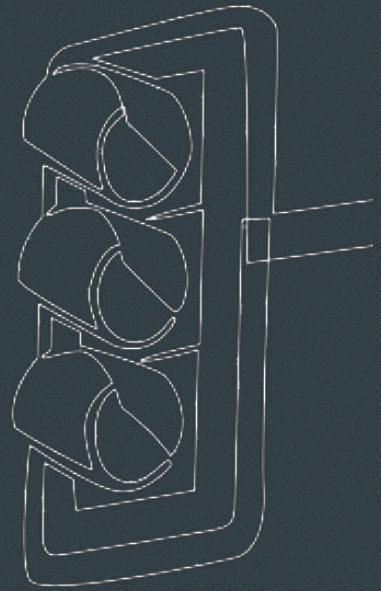
examples of ML in action

- energy management: optimizing energy grids to reduce waste and improve efficiency
- e-commerce: personalized recommendations based on shopping behavior

optimization power

- machine learning helps analyze complex datasets and optimize decisions in real-time, making life simpler and more efficient

# problem we chose: traffic



why traffic matters

- it’s on everyone’s nerves, causing daily discomfort and inconvenience
- being stuck in traffic adds stress and frustration to our lives

practical challenges

- increased travel times
- difficulty in managing daily schedules
- higher fuel consumption and wear on vehicles

how can we use machine learning to solve this problem and make our lives easier?

# traffic and sustainability

environmental impact

- reduced emissions: less idling and smoother traffic flow means lower greenhouse gas emissions
- reduced fuel consumption: optimized routes save resources

improving mental well-being

- less time spent in traffic = fewer distractions and less stress

efficiency gains

- machine learning-based solutions make traffic management smarter and more sustainable
- **Example:** if warmer weather correlates with increased congestion, we can predict this and plan accordingly by opening roads or optimizing routes

sourcecode

now switching to vscode…

and now the final plots and their correlations with temperature, time, and holidays

switching to streamlit…