

# Team Czechia



presents



**European Big Data Hackathon 2025**

Earth Observation: from Space to European Statistics

Brussels, 6–11 March 2025



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# HEAT

— IN THE —

# CITY



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# Based on a true story



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**Starring:** Major Cities in Europe

**Rating:** DEGURBA 1

**Camera:** Sentinel 2 and 3

**Sound:** Statistical Methods

**Covers:** EU Regional and urban policies



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# PRODUCED BY

**FrontEnd:** David Dobrovolný (#Voluntary)

**BackEnd:** Patrik Sekerka (#Axe)

**CommEnt:** Martin Černý (#Black)



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# with a special guest



*The world is changed,  
I feel it in the water,  
I feel it in the Earth,  
I smell it in the air*



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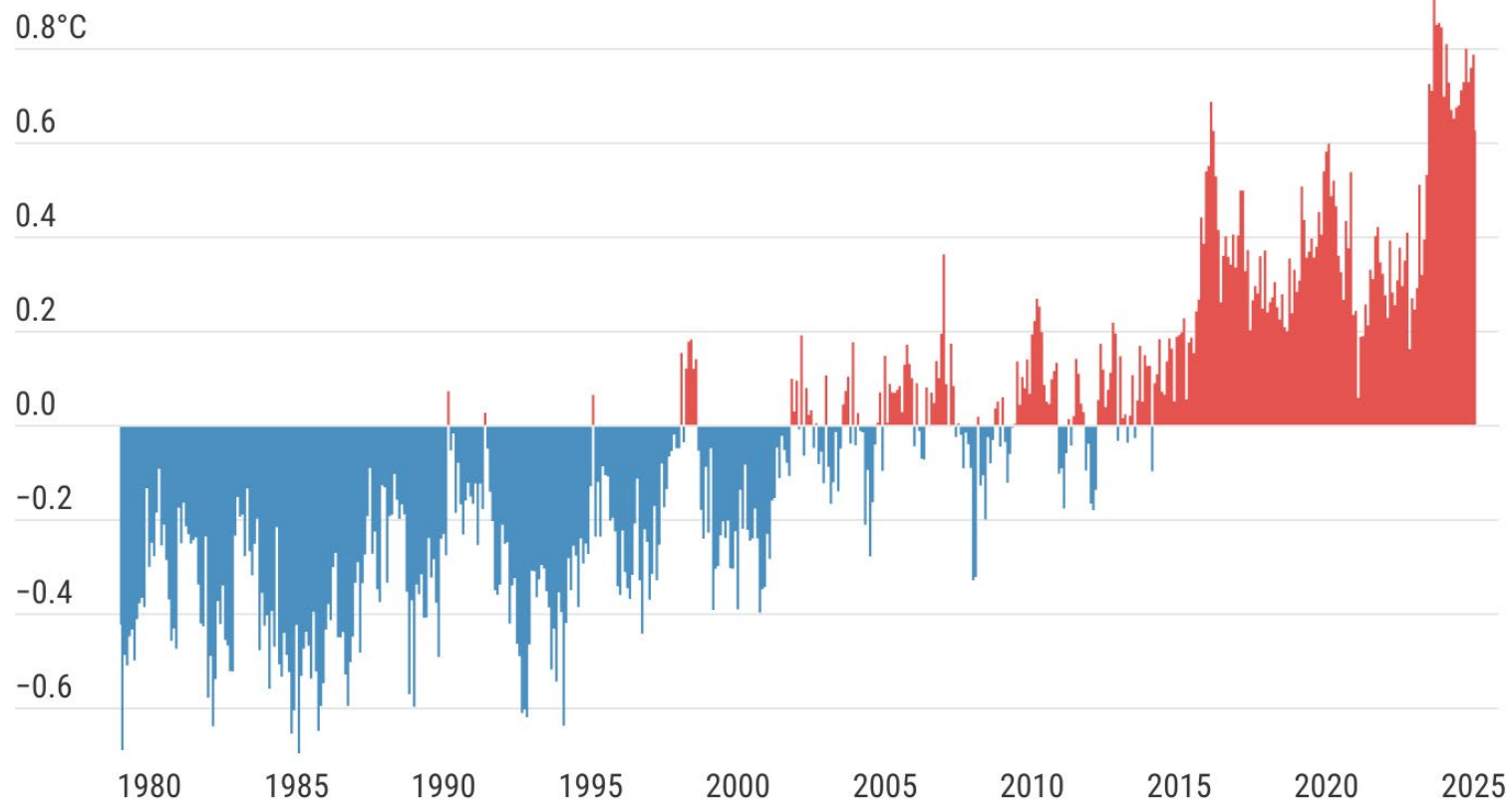


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# Global surface air temperature anomalies

Data source: ERA5 • Reference period: 1991–2020 • Credit: C3S/ECMWF



Select one option for:

February  all months  12-month average



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PROGRAMME OF  
THE EUROPEAN UNION



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<https://climate.copernicus.eu/surface-air-temperature-february-2025>

**The rain in Spain  
stays mainly  
in the plain...**

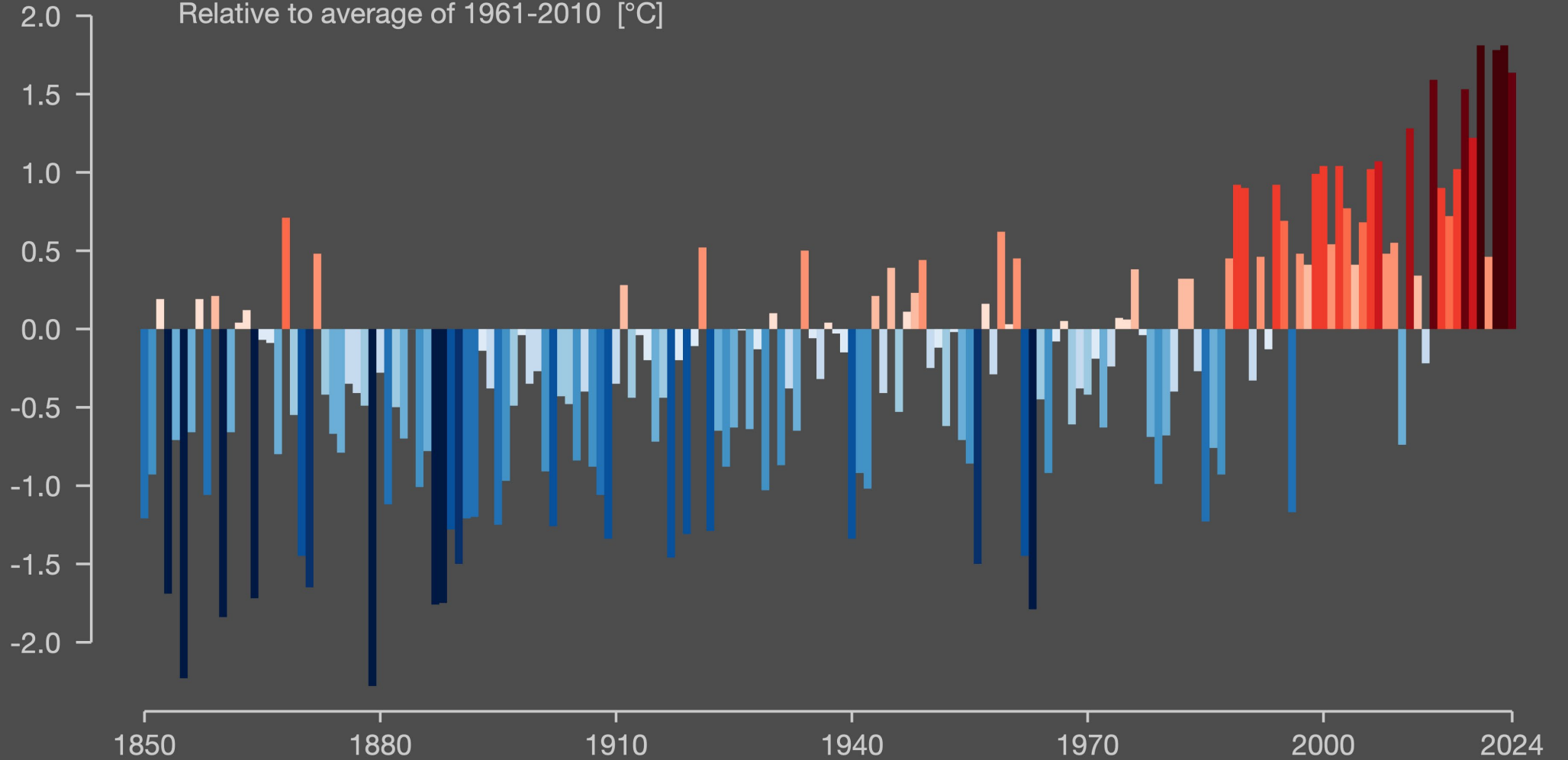
**The heat you feel  
and pity  
is mainly in the city!**



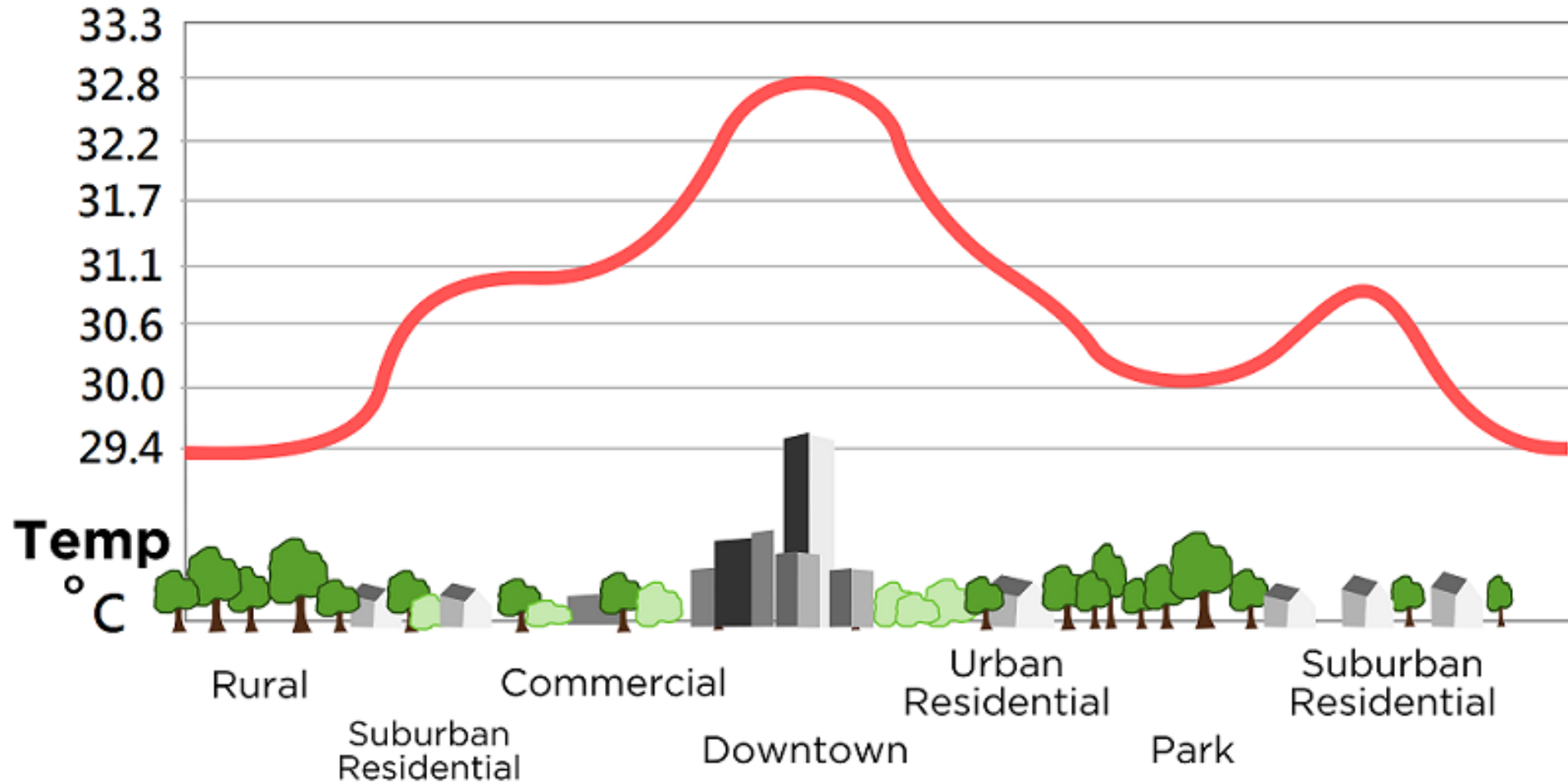


# Temperature change in Brussels

Relative to average of 1961-2010 [°C]



# URBAN HEAT ISLAND PROFILE



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# THE SOLUTION

**Heat In The City (HITC) dashboard**

for

**urban planners and local governments**

in order to

**design strategies**

**to reduce the heat stress**



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# Heat in the City

## Settings

Find Any City on the Map

Wien

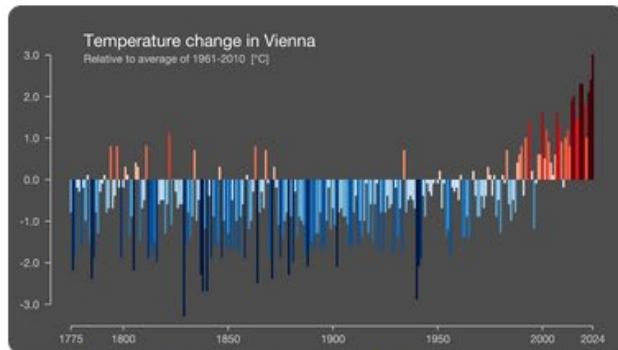
### Layers

- Vegetation (Green)
- Heat Index (Red)

### Select Year

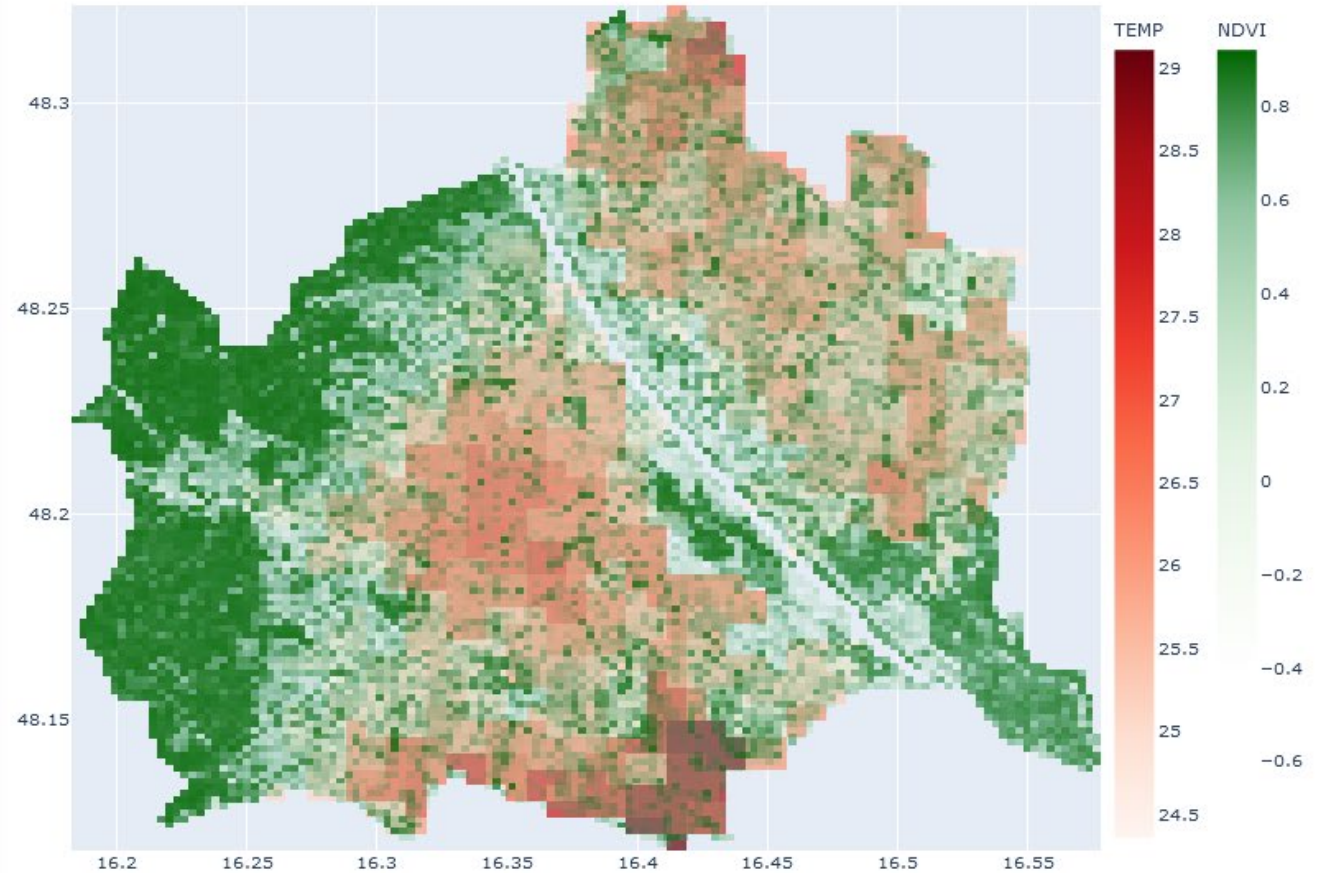
2017 2018 2019 2020 2021 2022 2023 2024

▶ Play



#ShowYourStripes by Ed Hawkins is licensed under CC BY 4.0

Year: 2017



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Map created with Plotly | Data source Map: OpenStreetMap | Data: Copernicus



# Heat in the City

## Settings

### Find Any City on the Map

Praha ✕

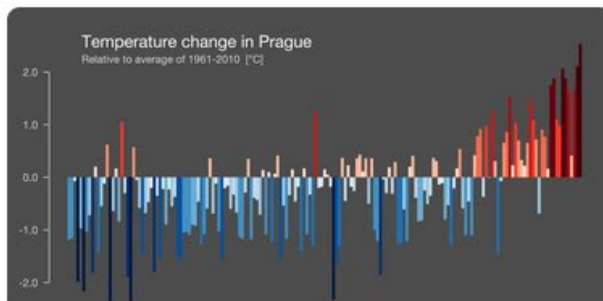
### Layers

- Vegetation (Green)
- Heat Index (Red)

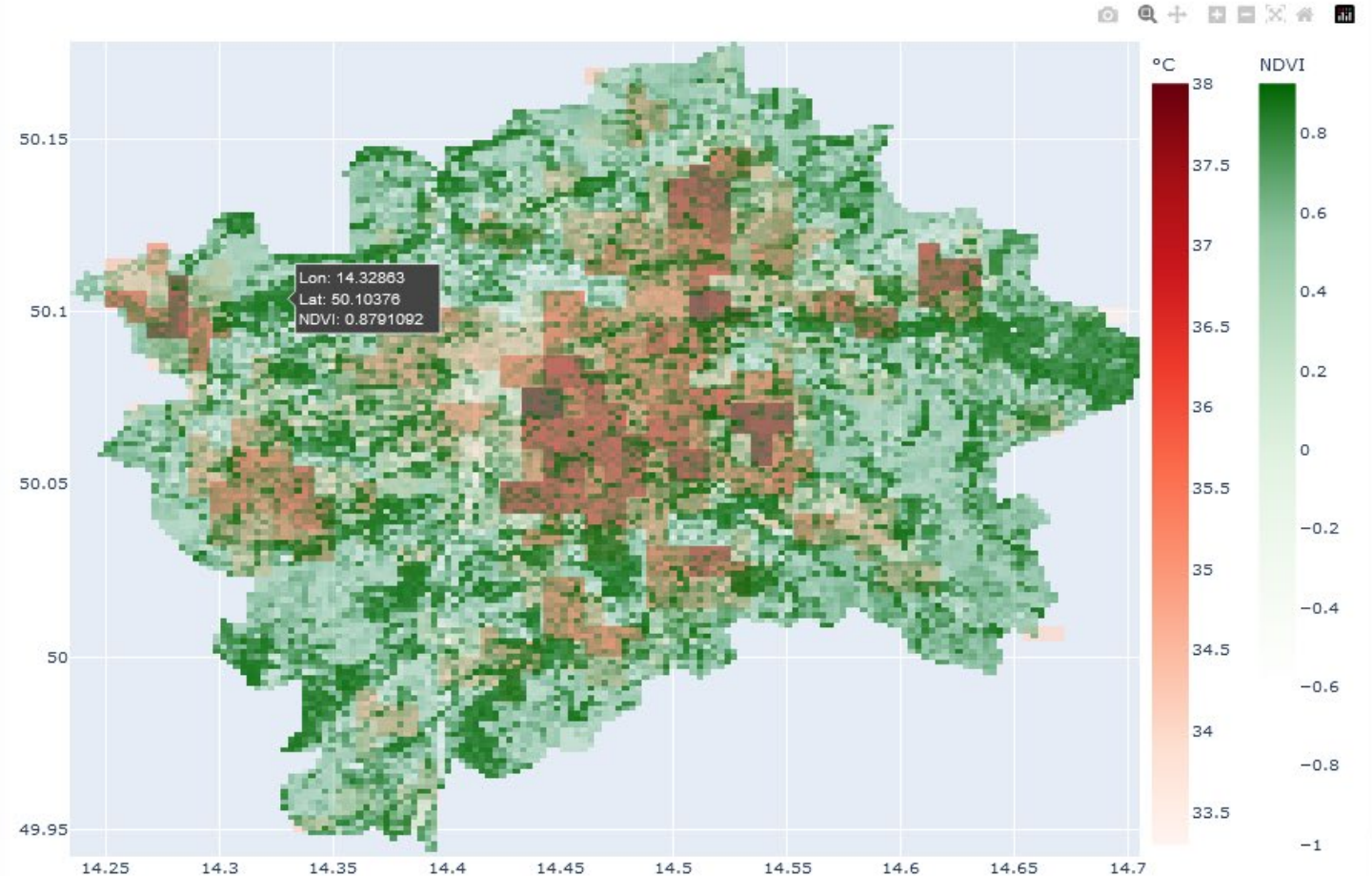
### Select Year



### Animation



Year: 2019



Map created with Plotly | Data source Map: OpenStreetMap | Data: Copernicus



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# Heat in the City

## Settings

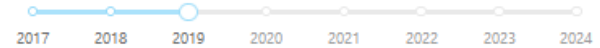
### Find Any City on the Map

Praha

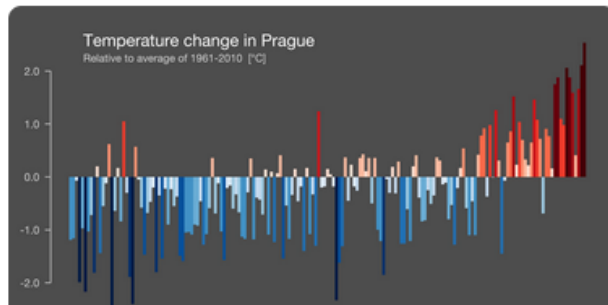
### Layers

- Vegetation (Green)
- Heat Index (Red)

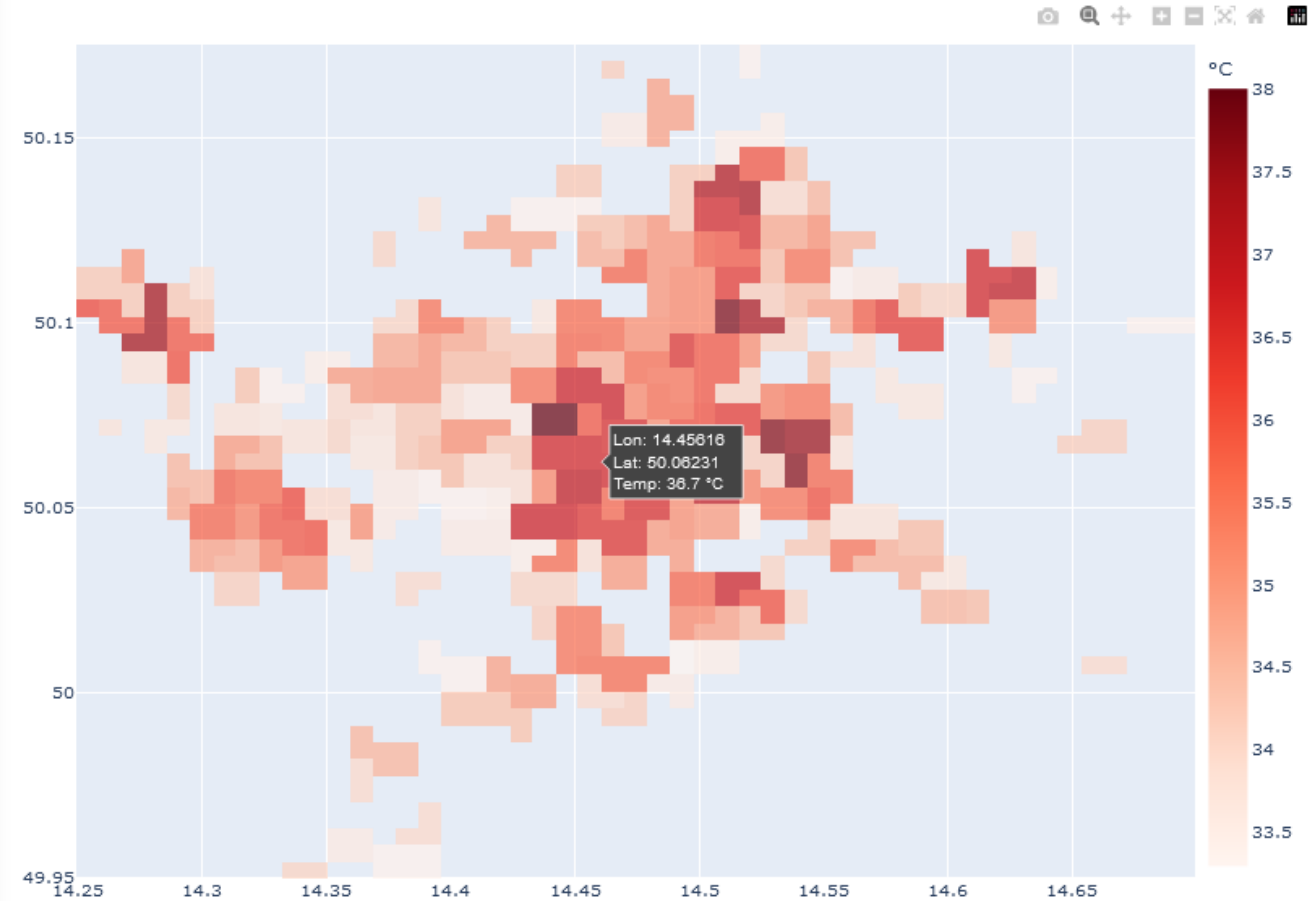
### Select Year



### Animation



Year: 2019



Map created with Plotly | Data source Map: OpenStreetMap | Data: Copernicus



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# Heat In The City (HITC) dashboard



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# Main features

- Selection of **City (LAU)**
- Selection of **indicators**
  - **NDVI** – 20x20 m resp. 60x60 m
  - **LST** – 1x1 km
- **Interactive map** -> **heat islands**
- **Time animation** – auto / manual
- **Climate stripes** for selected city
- **Mobile friendly** (responsive design)
- Customizable **open source solution** suitable **for any geographical areas**



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# Roadmap

**European policies**



**Regional strategies**



**Personal decisions**



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“Even the smallest person  
can change the course of the  
future.”

– Galadriel



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# Thank you



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