

# data4good Hackathon Vienna 2019

April 27-28, 2019

# Vienna Data Science Group

- **Mission**
  - Nonprofit association promoting knowledge, educating people and caring about social impact of data science methods, Big Data techniques and AI methodologies.
- **Diverse members**
  - Academics, professionals, students and all other Data Science enthusiasts
- **Different fields**
  - Mathematics, physics, econometrics, electrical engineering, medical science, finance, real estate, computer science and social sciences
- **World wide scope**
  - We build a strong community of passionate data scientists from various areas of research and industry, in Europe and all around the world.

**We strive to benefit the entire Data Science community**

# ***data4good - data science for positive social impact***

Rapid advances in Artificial Intelligence and data processing technologies are having a deep impact on society.

We strive for Data Science techniques that are

- Accessible
- Explainable
- Reproducible
- Fair

## ***data4good** - data science for positive social impact*

The data4good Hackathon in April was organized with the aim of closing the gap between buzz and knowledge

- brought NGO's, practitioners, and novices together
- gave first-hand experience on how to deal with the advantages and shortcomings of AI
- opened up new opportunities, and directions for developing algorithms

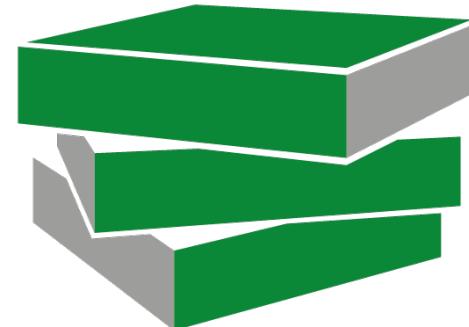
# Our NGO/Social Enterprise Partners:



**Hilfswerk  
International**



**Hilfswerk  
Österreich**



**GRÜN  
STATT  
GRAU**

**Sponsored  
by**



**contextflow**



**Hosted  
by**



# GrünStattGrau Project

**DS Lead:** Liad Magen

**Team:** Regina Babo, Alexander Baratsits, Alexa Kiss, Andrea Madunic, Daniel Soukup

**NGO Partners:** Susanne Formanek, Gert Zechner

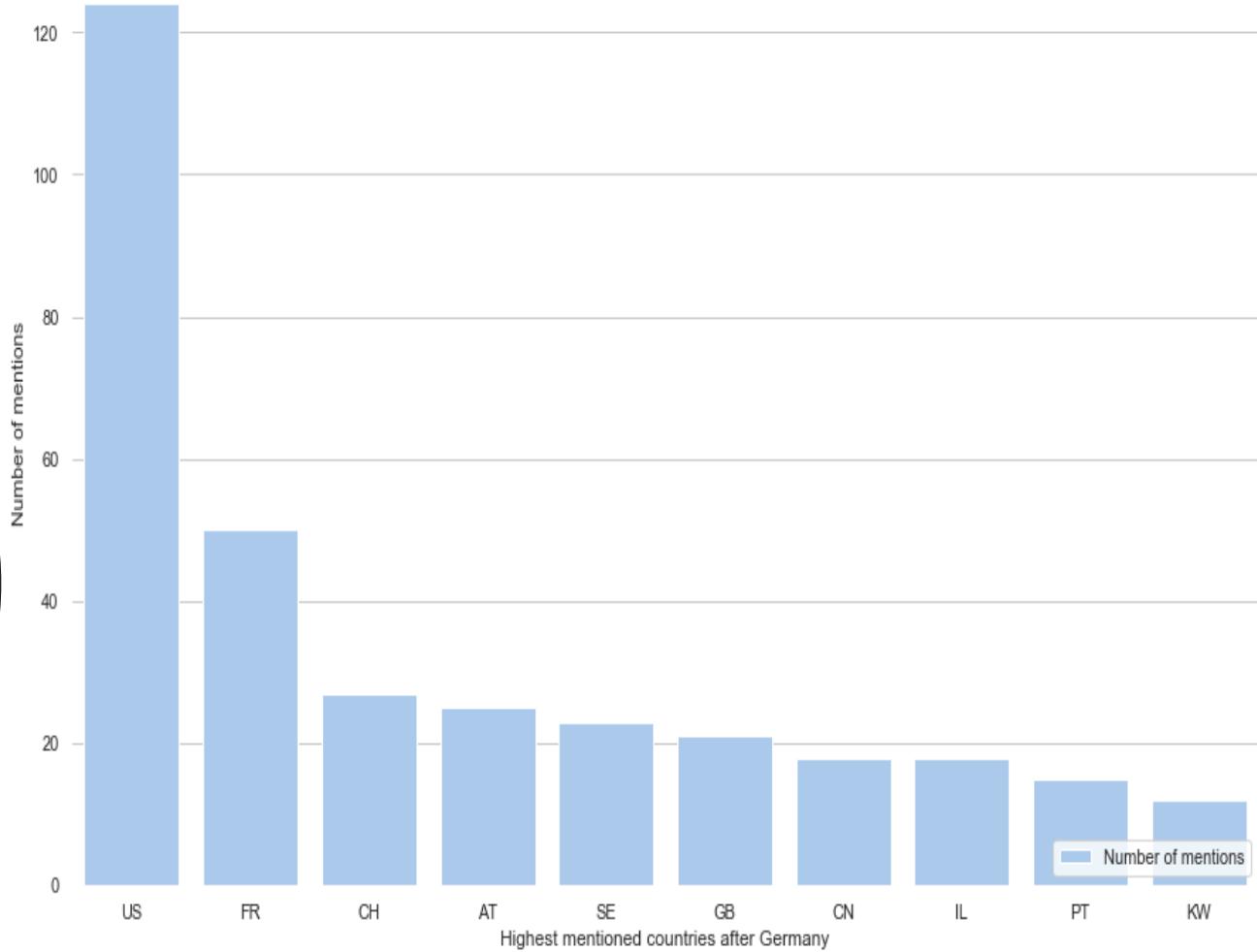
## Goals:

Based on Natural Language Processing techniques, they tried to respond to the following business needs:

- Survey of areas associated with green roofs
- Extracting legal information from text
- Co-occurrence graphs of persons and organizations

The Data came from German text in magazines

# FIRST INSIGHTS FOR COUNTRIES



Note: Germany is mentioned 1290 times and we excluded it from the bar chart to ease the reading.



## FIRST INSIGHTS FOR COUNTRIES

EXPECTE  
D  
OUTCOM  
E

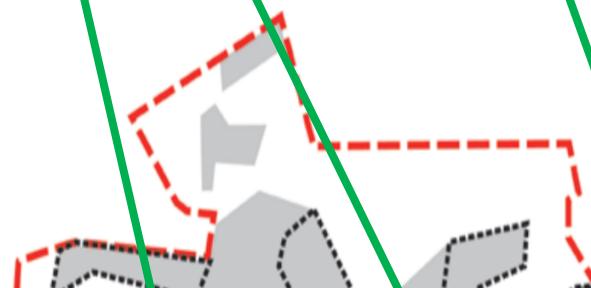
# Förderun g Bebauungspla n

Geset  
z

im Bebauungsplan", Seite 20).

Die Fixierung von Dachbegrünungen in Bebauungsplänen (bzw. Grünordnungsplänen) wird bereits seit über 30 Jahren erfolgreich eingesetzt und gehört damit zu den Förderinstrumenten mit der längsten Historie. Insbesondere die Inhalte des § 9 Abs. 1 Nr. 25 des BauGB, die Mitte der 80er-Jahre die Festsetzungsmöglichkeiten für Teile

Falls die Begründung nicht auf Grundlage der Eingriffsregelung erfolgen kann, bedeutet dies nicht, dass die Dachbegrünung keine Berücksichtigung im Bebauungsplan findet. Aufgrund der zahlreichen Vorteile begrünter Dächer für die Stadtökologie liefert sowohl das Baugesetzbuch



§

# Hilfswerk International Project

**DS Lead:** Marek Danis, Mohamed Auf

**Team:** Helmut Gaffl, Bartek Mazurkiewicz, Daniel Mosegui Rodriguez

**NGO Partners:** Bernhard Stepanek, Bianca Weissel

## Goals:

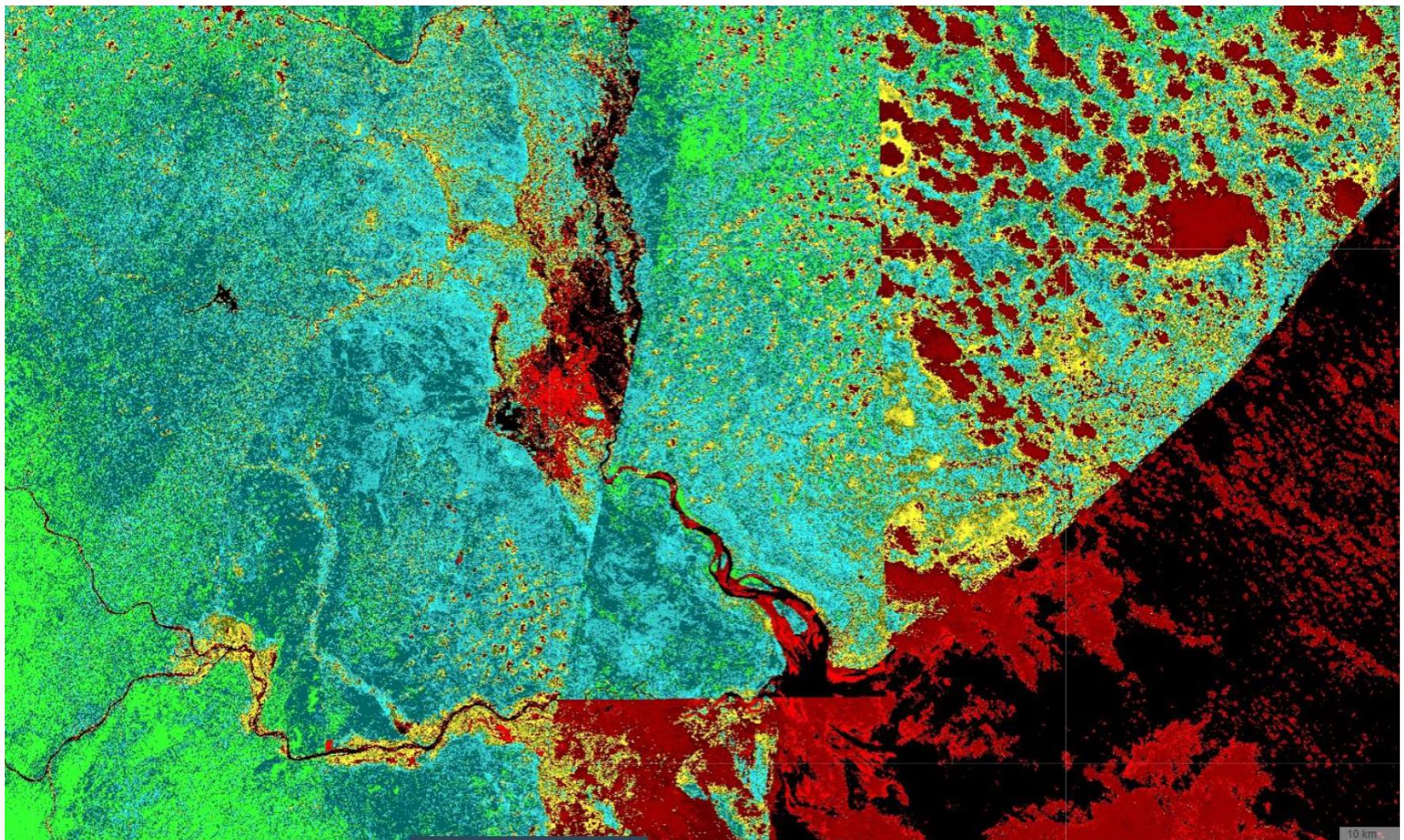
### *Mozambique – Cyclone Idai*

Flood detection using Sentinel-2 images (ESA Copernicus satellite):

- **Area flooded (index)**
- Agricultural land flooded
- **Streets probably flooded**
- Blown-off roofs (percentage or number)

**Spectral bands for the Sentinel-2 sensors<sup>[10]</sup>**

Sentinel-2 bands	Sentinel-2A		Sentinel-2B		Spatial resolution (m)
	Central wavelength (nm)	Bandwidth (nm)	Central wavelength (nm)	Bandwidth (nm)	
Band 1 – Coastal aerosol	442.7	21	442.2	21	60
Band 2 – Blue	492.4	66	492.1	66	10
Band 3 – Green	559.8	36	559.0	36	10
Band 4 – Red	664.6	31	664.9	31	10
Band 5 – Vegetation red edge	704.1	15	703.8	16	20
Band 6 – Vegetation red edge	740.5	15	739.1	15	20
Band 7 – Vegetation red edge	782.8	20	779.7	20	20
Band 8 – NIR	832.8	106	832.9	106	10
Band 8A – Narrow NIR	864.7	21	864.0	22	20
Band 9 – Water vapour	945.1	20	943.2	21	60
Band 10 – SWIR – Cirrus	1373.5	31	1376.9	30	60
Band 11 – SWIR	1613.7	91	1610.4	94	20
Band 12 – SWIR	2202.4	175	2185.7	185	20





# Thanks for your attention!

Still have Questions? Come talk to us!

- ★ Together we can brainstorm ideas on the most effective use of Data Science for your organization
- ★ We will help you plan out which data you have, and which data you still need
- ★ We will match you with a Data Science Mentor, who will help you prepare for the Hackathon

<https://data4good.vdsg.at>  
[data4good@vdsg.at](mailto:data4good@vdsg.at)

or contact one of the organizers directly  
at [christopher.kittel@vdsg.at](mailto:christopher.kittel@vdsg.at), [rания.wazir@vdsg.at](mailto:rания.wazir@vdsg.at)

