



Digital Social Innovation and Collective Intelligence Design

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Today

Introduction to Nesta and Collective Intelligence

Lessons from Digital Social Innovation (and why we still need to fix the plumbing)

Advancing the field through better understanding of Collective Intelligence Design -

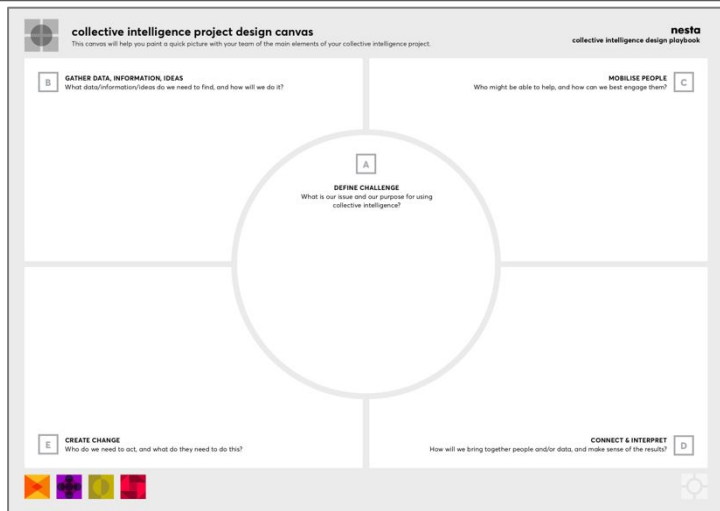
CI / DSI and the Covid-19 response

Building on lessons from our work on Digital Social Innovation (...or tech for good, civic tech , social purpose technology)

Using technology to mobilise people to solve some of society's biggest challenges



How do we get smarter together?



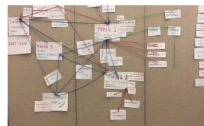
CitizenLab: Augmenting policy-making through AI-generated insights



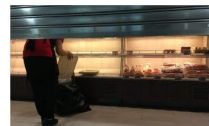
ISTC-CNR: Multi-agent systems for enhancing collective intelligence



AI Lab: Hybrid intelligent solutions for collective risk situations



HURIDOCs: Search and Power: algorithms for human rights defenders



Hong Kong Baptist University: Networked Intelligent Actions - testing the potential of crowdsourcing logistics in food rescue



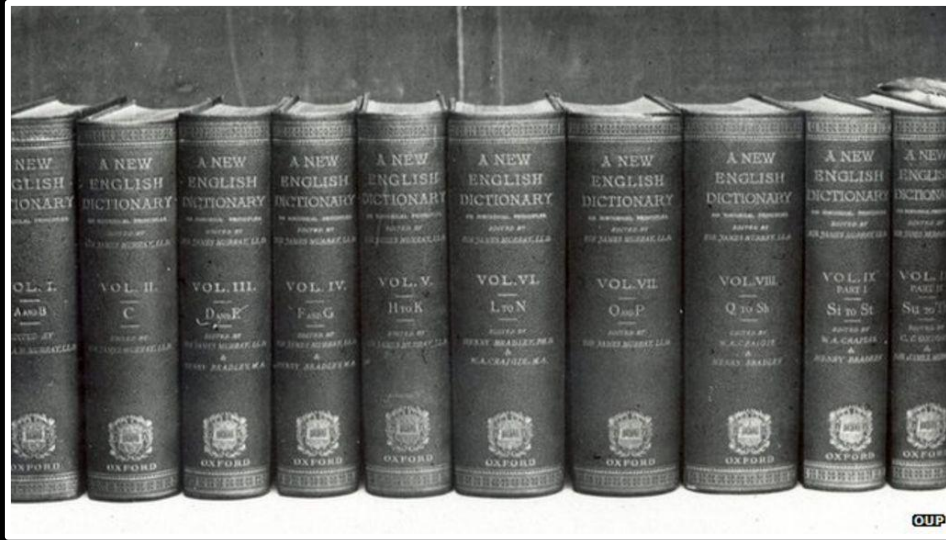
BIT: Using collective intelligence to improve teacher feedback



what is collective intelligence?

Collective intelligence (CI) is created when people work together, often with the help of technology, to mobilise a wider range of information, ideas and insights to address a challenge.

An old idea...



... reimagined

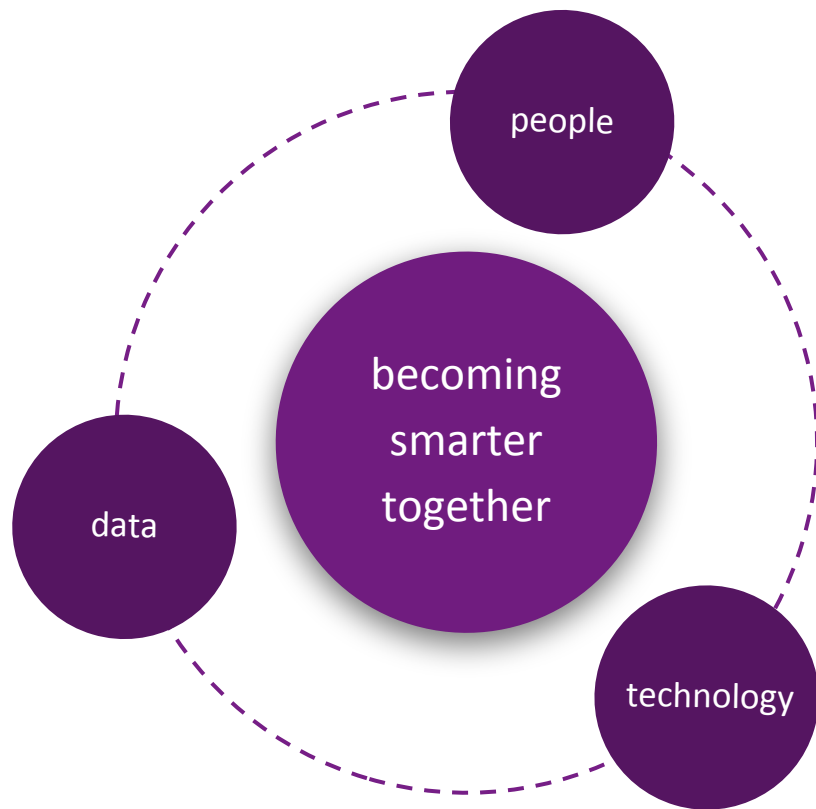
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ZOO NIVERSE





when should I use collective intelligence?



what is collective intelligence for?



I have poor/incomplete information about this issue, or it is changing rapidly

I want to anticipate how a problem or situation might change in the future.

Understanding problems

Generate contextualised insights, facts and information on the dynamics of a situation.

- Connects multiple types of data (e.g., satellite data with crowdsourced mapping of a location)
- Uses novel data sources or proxy data (e.g., light source data to measure GDP)
- Often involves crowdsourcing data (e.g., experiences or information) from people
- May use machine intelligence to analyse combined data sets or create models

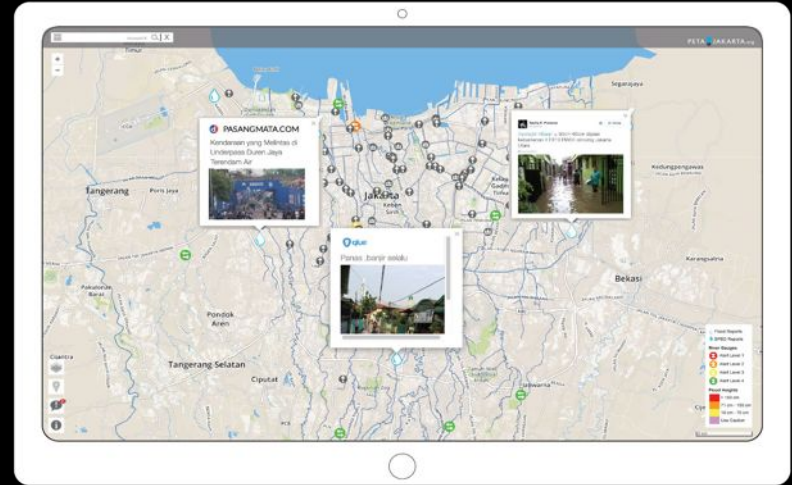
Real-time data dashboard

Open map of local level (granular) data

Predictive model

Early warning alerts

Understanding problems: Peta Bencana



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CELEBRATING 10 YEARS OF CROWDSOURCING AND CO-CREATION WITH LEGO® FANS

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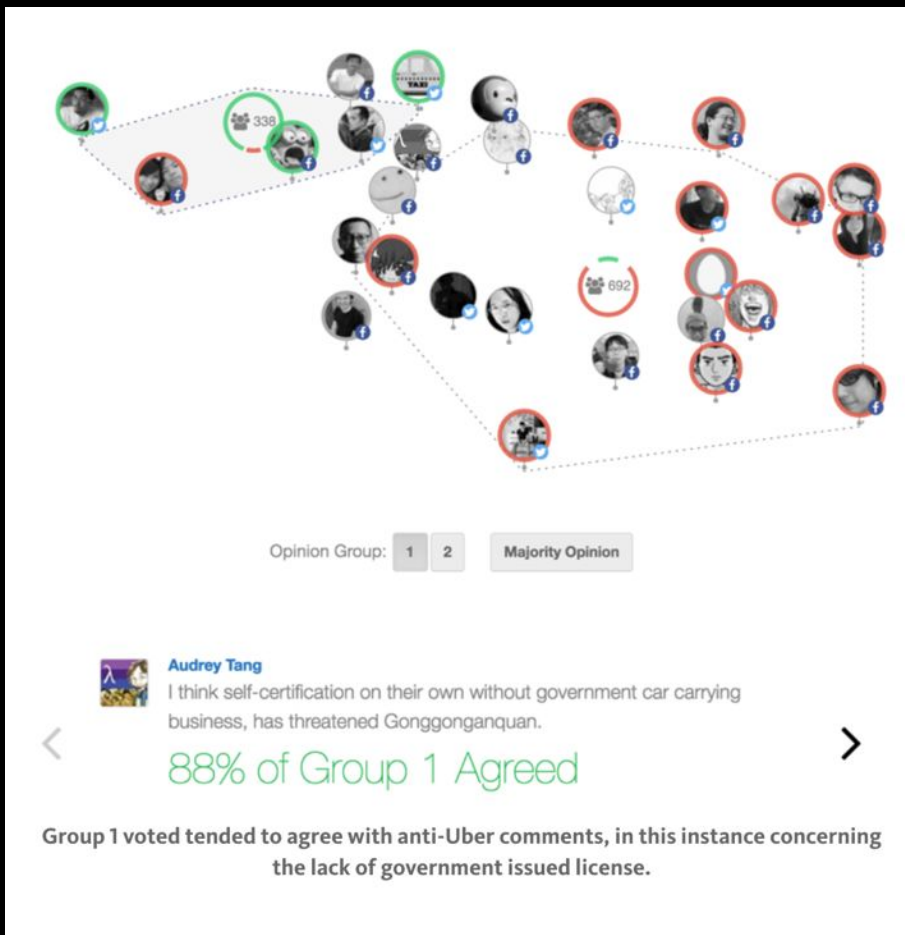
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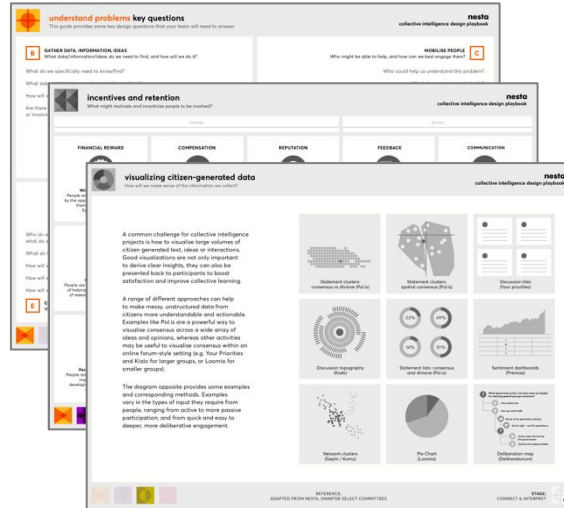
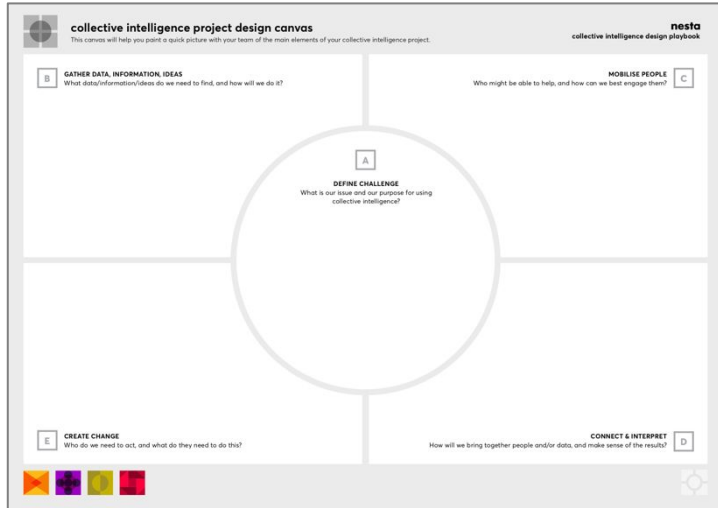
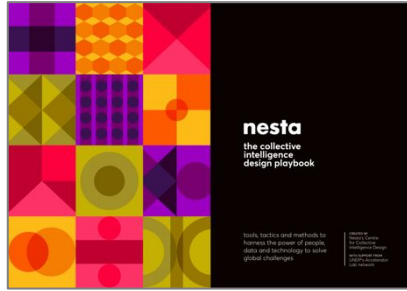
DOWNLOADS

LEGO® Ideas – originally started as a playful experiment – has evolved into a global phenomenon of crowdsourcing user-driven innovation from LEGO adult fans

Decide & Act: VTaiwan



Design your own project using the collective intelligence design playbook



Understanding DSI across Europe

digitalsocial.eu

DIGITAL SOCIAL INNOVATION

SHOWCASE YOUR PROJECT, MEET
COLLABORATORS AND FIND FUNDING

JOIN THE COMMUNITY OF **1,888 ORGANISATIONS** AND **1,065 PROJECTS** USING DIGITAL
TECHNOLOGIES TO TACKLE SOCIAL CHALLENGES

JOIN NOW



FUNDING

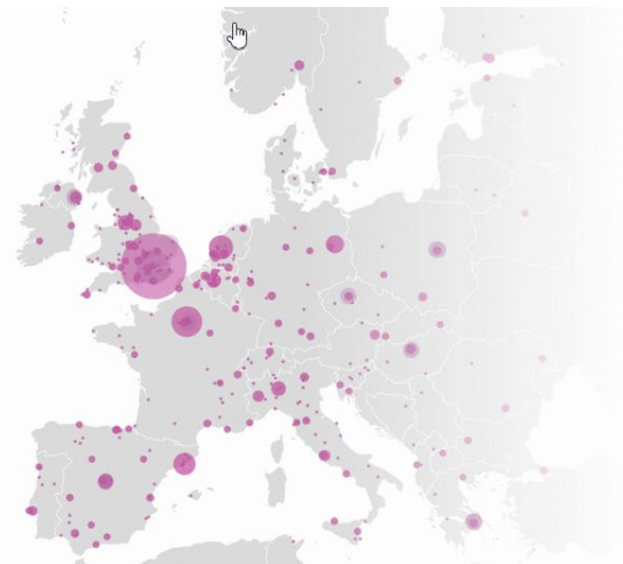
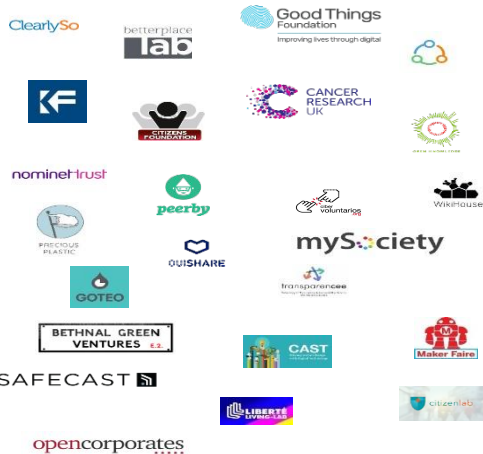
Use our funding directory to find
opportunities for your project

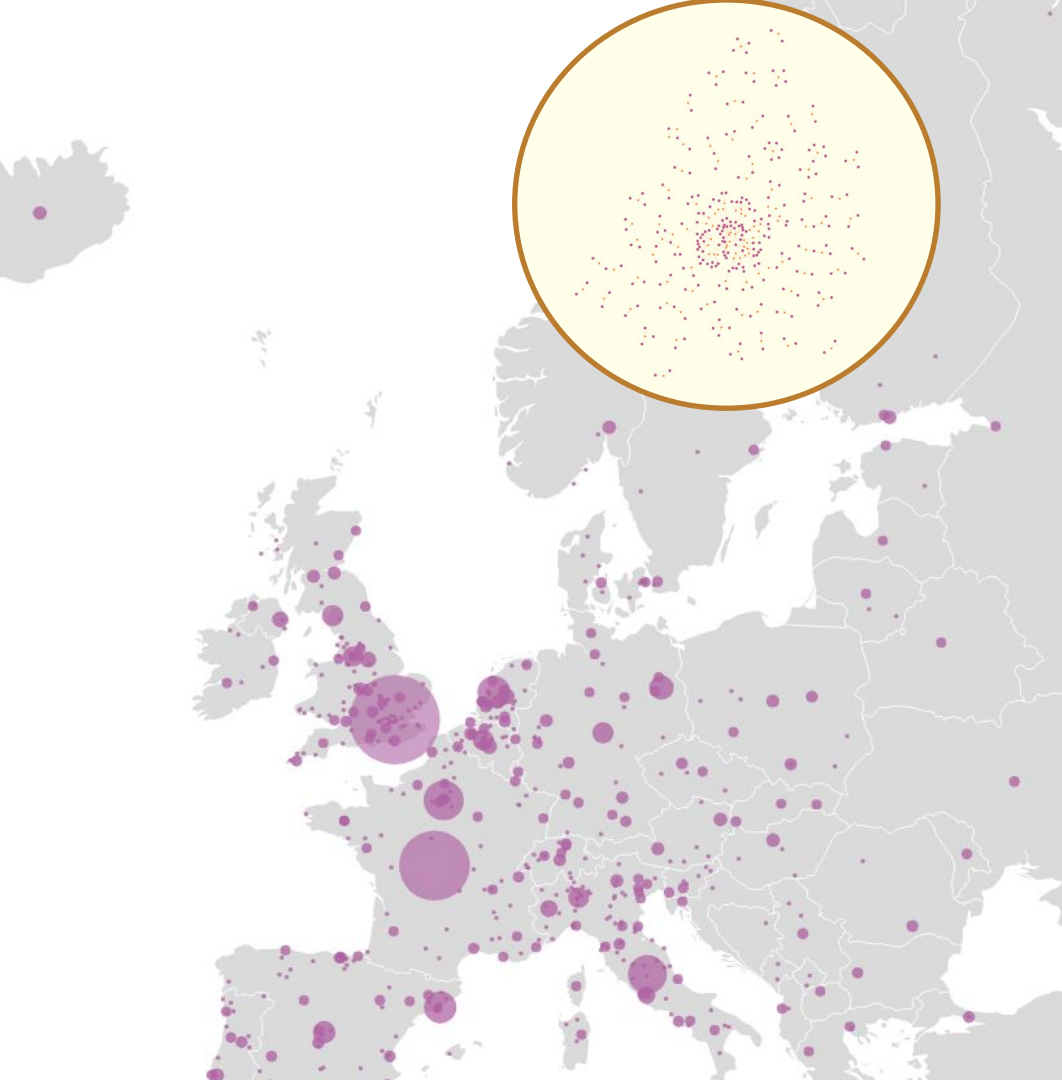
EVENTS

Explore DSI events happening around
Europe

NEWS & BLOGS

Our blog features stories of the people
and projects pioneering digital social
innovation





- Funding and investment in DSI is **insufficient** and **geographically unequal**
- Structural shortage of digital skills **Digital skills** and leadership preventing growth of DSI, plus at times too much focus in funding on the **cutting edge** (Not all DSI is complex technology!)
- Build it and they will come" mindset. Poor understanding of **business and impact models** (and little support to develop these)
- Limited engagement in DSI from **public sector**, despite growth in e-government and procurement remains a barrier
- **Diversity** remains an issue

Help DSI grow

Support DSI through funding mechanisms (not necessarily but better funding)

Invest in intermediaries and support infrastructure

Invest in and enable DSI approaches within existing CSOs

Enable peer learning and the spread of best practice

Conduct further research into the supporting conditions and models for growth and sustainability of DSI

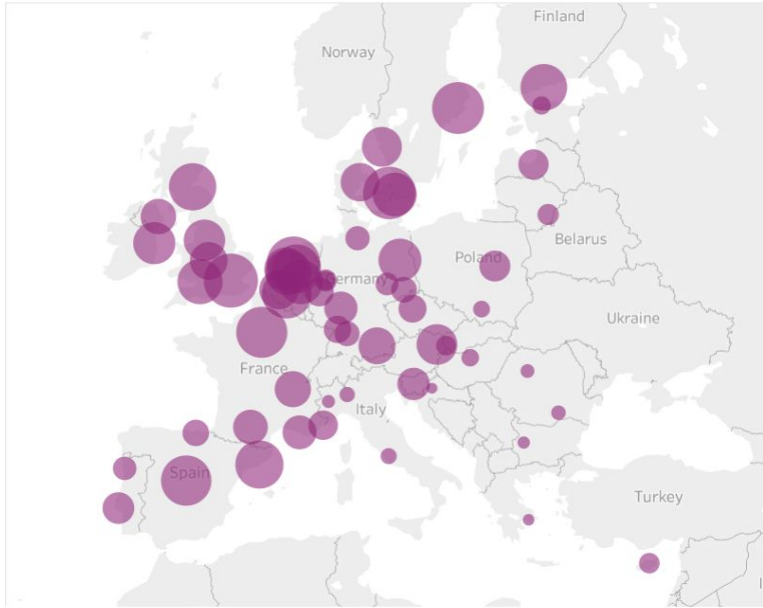
Use public procurement to advance DSI

The DSI index

Can we think about DSI in the same way we support and attract
'traditional' tech startups?

Ranking

London	1
Amsterdam	2
Copenhagen	3
Stockholm	4
Paris	5
Madrid	6
Brussels	7
Utrecht	8
Barcelona	9
Edinburgh	10
Helsinki	11
Rotterdam	12
Bristol	13
Eindhoven	14
Malmö	15
The Hague	16
Berlin	17
Dublin	18
Manchester	19
Vienna	20
Gothenburg	21
Ghent	22
Aarhus	23
Birmingham	24
Munich	25
Lyon	26



Skills



Infrastructure



Diversity and inclusion



Collaboration



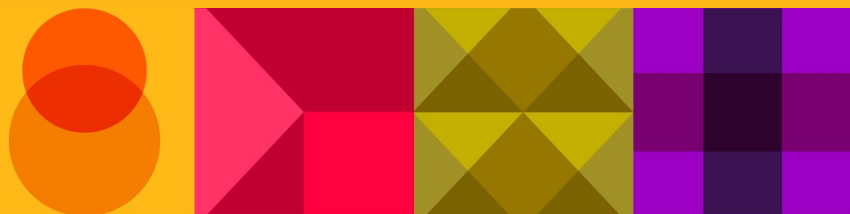
Funding



Civil Society



Advancing the field through better
understanding of collective
intelligence design and how we can
use AI to enhance our human
collective intelligence



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The future of minds and machines

How artificial intelligence
can enhance collective
intelligence

AUTHORS

Aleks Berditchevskaia
Peter Bæck

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AI and Collective Intelligence: case studies

20 projects bringing Artificial Intelligence and
Collective Intelligence together



MapWithAI: Computer vision based
on supervised deep learning to
support community mapping



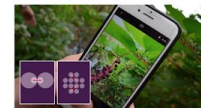
Common Voice: Crowdsourcing
voices to train speech recognition
software



Factmata: Assessing trustworthiness
of online content using community
annotation and natural language
processing



CitizenLab: Natural language
processing to categorise, prioritise
and summarise active citizen inputs



iNaturalist: Helping citizen scientists
accurately identify species with
computer vision



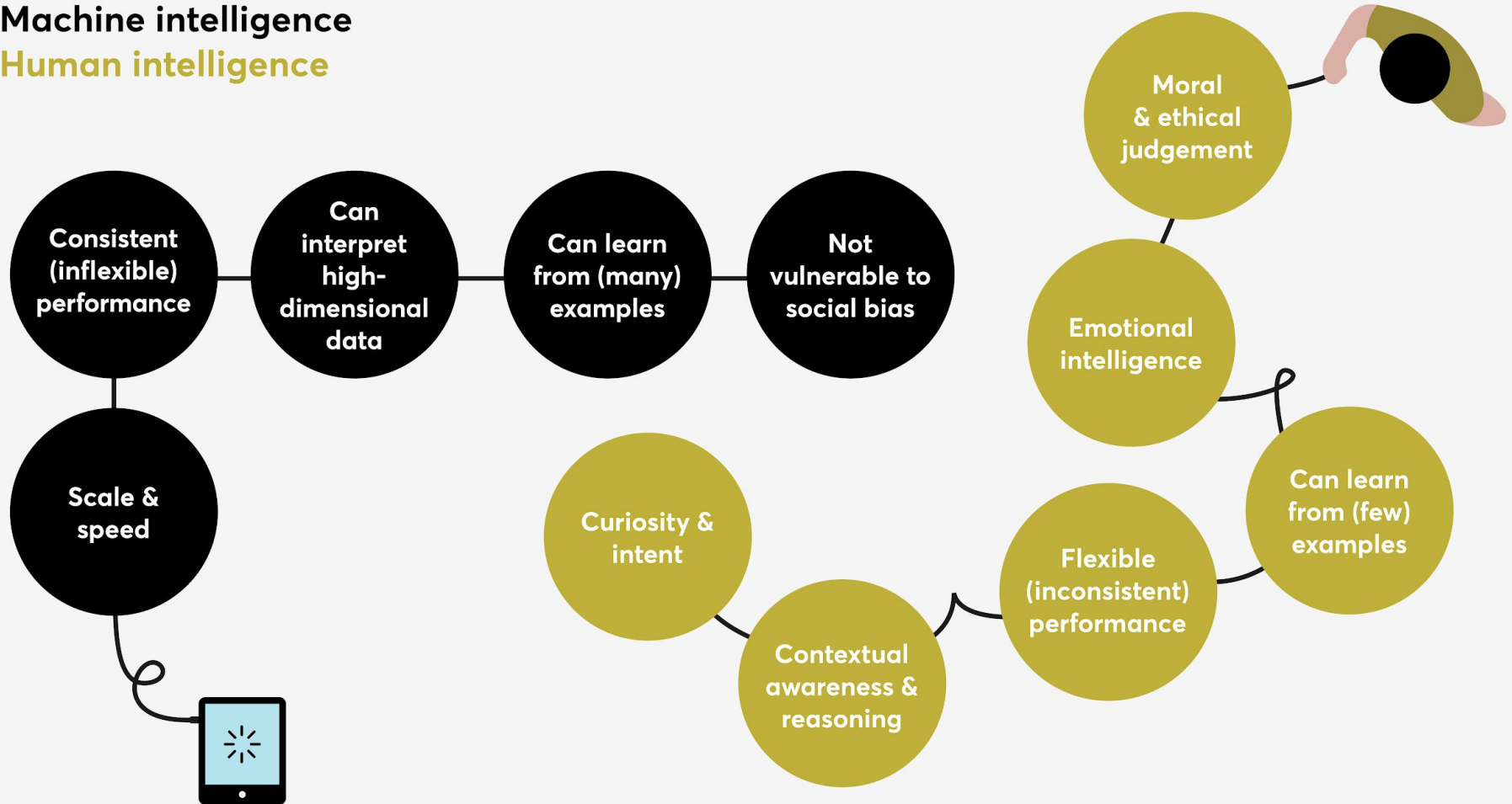
OneSoil: Using computer vision,
based on supervised machine
learning, to support a global
community of farmers

nesta.org.uk/report/future-minds-and-machines

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Machine intelligence

Human intelligence

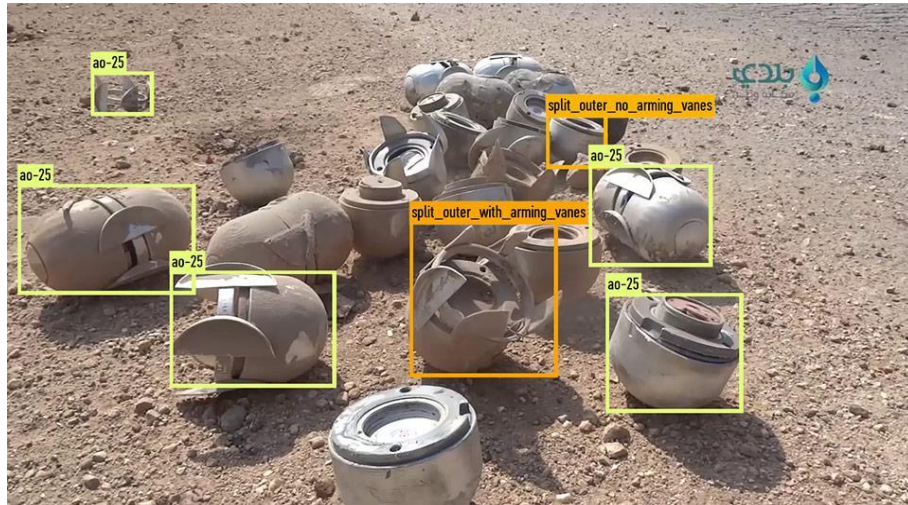


WeFarm

Using natural language processing (NLP) to enable peer support between smallholder farmers

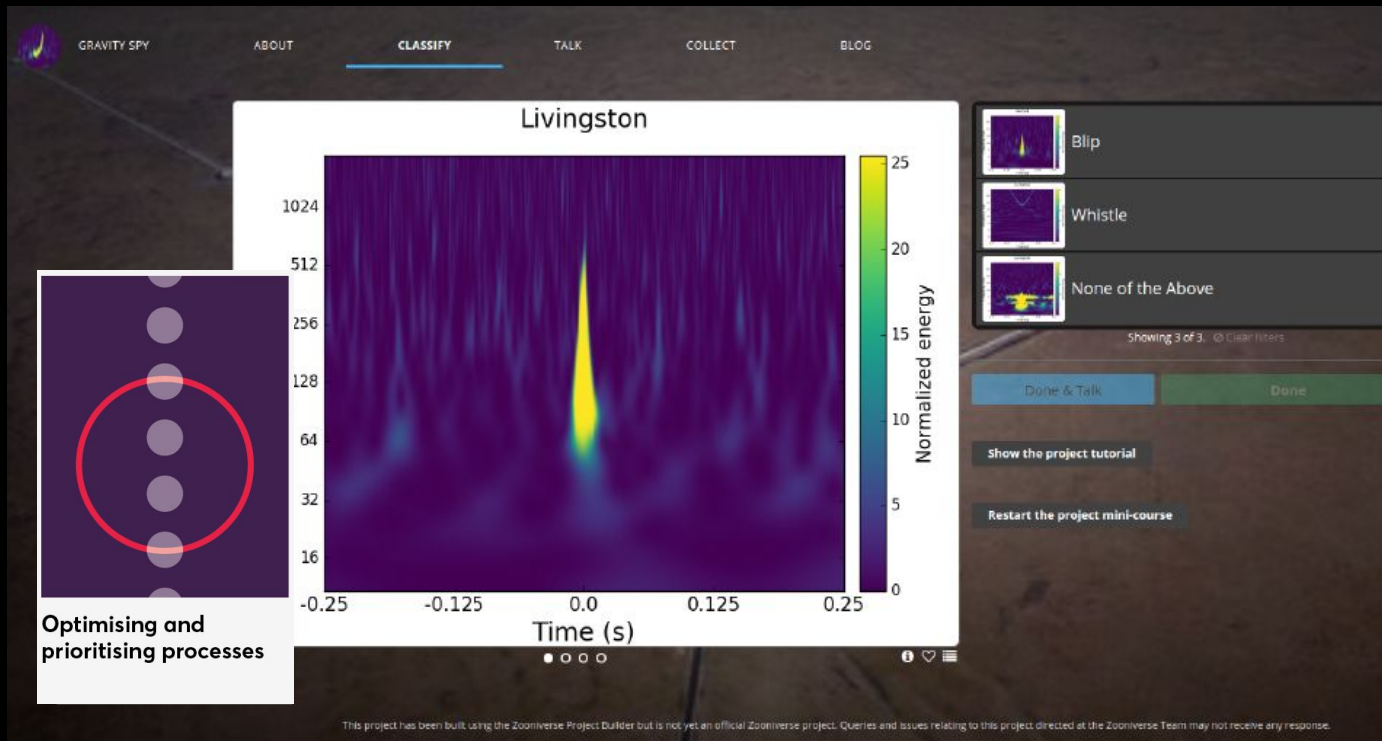


USING MACHINE LEARNING TO DETECT CLUSTER MUNITIONS

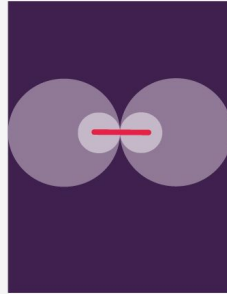


Zooniverse: Galaxy Spy

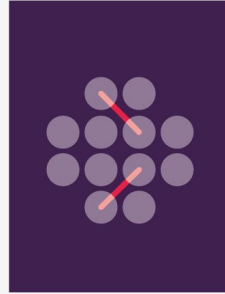
Using deep learning to personalise and improve training of volunteers for citizen science



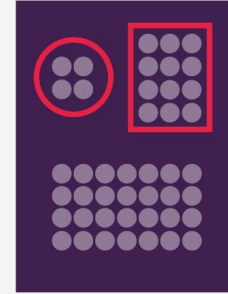
The added value from AI



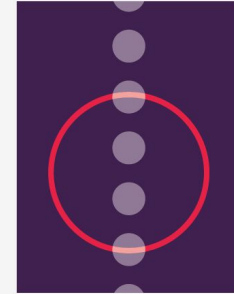
Growth in efficiency and scale of data processing



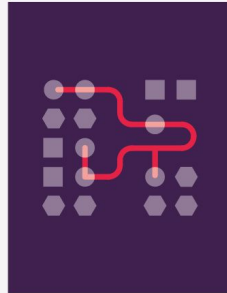
Making new causal connections for complex issues



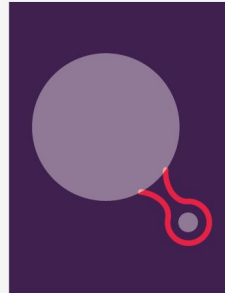
Organising human knowledge and finding structure



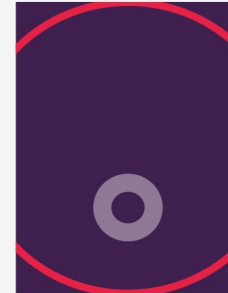
Optimising and prioritising processes



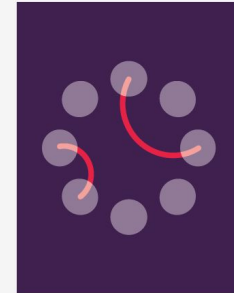
Modelling and visualising complexity



Increasing the reach of and access to rare knowledge



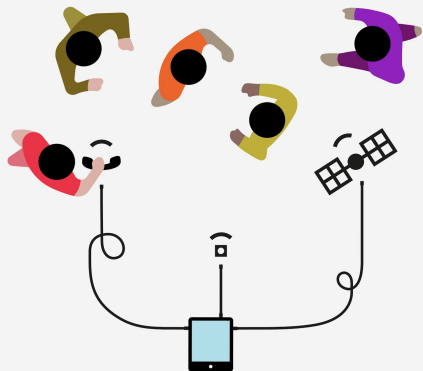
Transformational creativity



Improving interactions between individuals

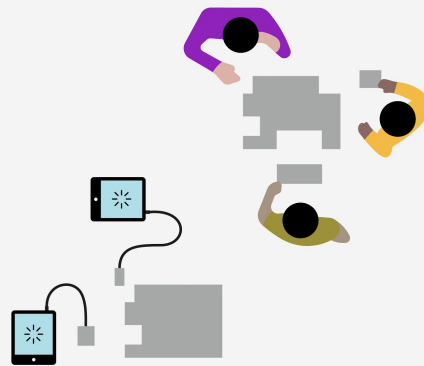
An emerging framework

Machines working on data generated by people and sensors.



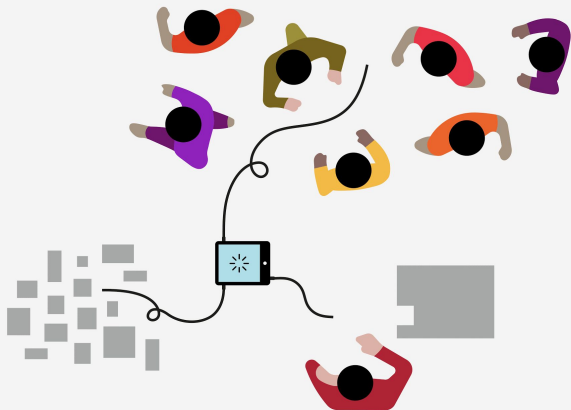
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People and machines taking turns to solve problems together.



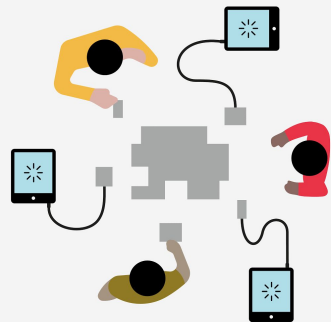
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Using machines to connect knowledge and tasks in groups.



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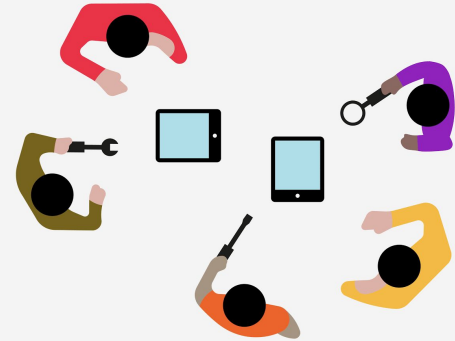
People and machines solving tasks together at the same time.



4

Can collective intelligence help to improve AI?

People supporting the development of better machines.

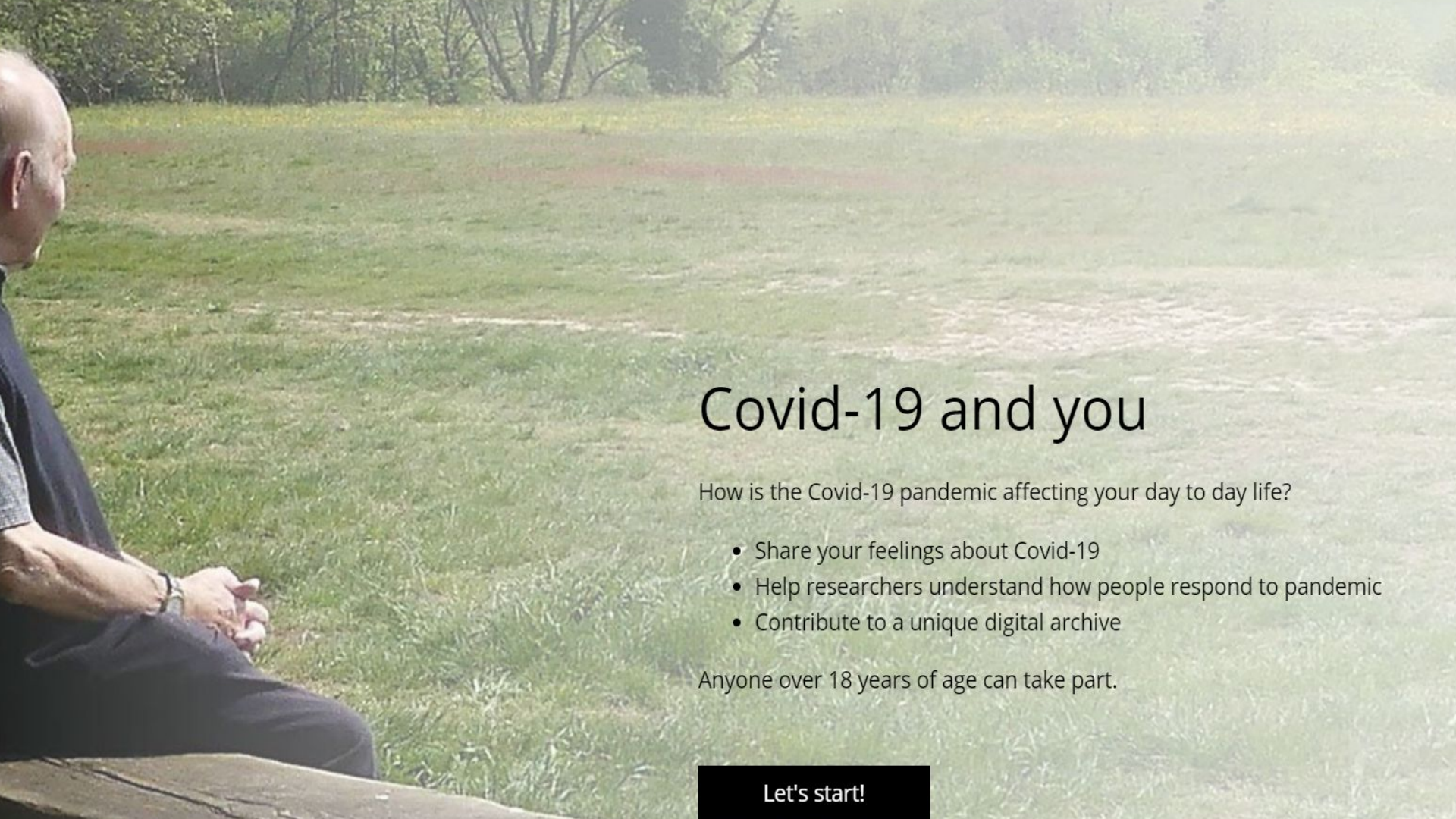




Mobilising collective intelligence to tackle the COVID-19 threat

<https://www.nesta.org.uk/blog/mobilising-collective-intelligence-tackle-coronavirus-threat/>

1. Predicting and modelling outbreaks
2. Citizen Science
3. Real-time monitoring and information
4. Social media mining projects
5. Serious games
6. Open source test kits
7. Sharing knowledge

A man is sitting on a stone wall in a grassy field. He is looking towards the right side of the frame. The background is a lush green field with trees in the distance. The overall scene is peaceful and natural.

Covid-19 and you

How is the Covid-19 pandemic affecting your day to day life?

- Share your feelings about Covid-19
- Help researchers understand how people respond to pandemic
- Contribute to a unique digital archive

Anyone over 18 years of age can take part.

Let's start!





The long read

The power of crowds

<https://www.theguardian.com/news/2020/jun/02/the-power-of-crowds>



Questions