

CAN GAMIFICATION SAVE THE PLANET?

Games are a big deal. But can they save the planet?

This is the quest that Silicon Valley-based environmental engineer Katie Patrick has been pursuing in her recent book, *How to Save the World: How to Make Changing the World the Greatest Game on Earth*.

Since the recent tech startup boom, entrepreneurs have been investing in the art of getting their users *to do stuff* – triggering a renaissance in the field of behavioral psychology. Designers then took another step, looking to understand why games are so effective at getting their players hooked – and called this new approach *gamification*.

What happens when you put behavioral design, gamification, and technology entrepreneurship together with big environmental causes like climate change, air pollution, and deforestation? Can we change people's environmental behavior using gamification techniques? Can we make saving the world as fun as a game?

Katie calls this emerging movement "Fitbit for the Planet." She explains the value of showing people real-time data from sensors and satellites to teach them their environmental footprint – CO2, water, waste, pollution – just as a Fitbit shows you the number of steps you've taken.

"There is a powerful wave of environmental innovation building. We're building a distributed operating system for the planet, an Earth OS. When we show environmental data to humans in a real-time feedback loop, it becomes like game, and really gives them the feeling of agency that makes change happen. The "Fitbit for the Planet" movement holds great opportunity for startups, innovation, and environmental action, yet few people know yet what a big deal it is. I hope my book will help unlock our imagination to make gamified apps and projects that make saving the world the greatest game on Earth."



SILICON VALLEY IS CREATING AN OPERATING SYSTEM FOR THE PLANET

If you ask someone what the air pollution level is outside their home, how much CO2 their house released yesterday, or what percentage of their city is covered by vegetation, no one will be able to give you an answer, because no one really knows.

"There's been a lack of ability to get data about our constant and ever-changing environmental footprint. It's largely invisible to us," says Katie Patrick, an environmental engineer who specializes in what she calls "Fitbit for the Planet" design.

However, the gaps in this data are starting to be bridged. In her recent book, *How to Save the World*, Katie explores a new technology movement brewing in Silicon Valley. Companies such as Planet, Aclima, and Google Environmental Insights have made strong inroads into making such data available. A new project called TraCE, by Al Gore, is tracking greenhouse gas emissions using machine learning applied to satellite imagery.

The secret making this Planet OS or Earth OS movement so exciting lies in two things that have never happened before. The first is the *real-timeness* of available data – it updates quickly, like a Fitbit. The second is the *granularity* of this data – you can see air pollution or CO2 emissions not just for an entire city, but for each individual house, school, or office.

Katie is fascinated by using this data the way a game designer would use points or levels in a video game. She says,

"To influence people, it really helps to have the data updated instantly – as a kind of psychological reward – and when you can combine that with comparing one person, city, or business against another, you've got a toolkit of powerful psychological drivers to get people to change. We're moving into the age of the *cybernetic Earth*, where every pixel of the planet will be geo-tagged with data from satellites and vast networks of sensors updating in real time. This data will be available to any app developer, game designer, community influencer, or NGO."

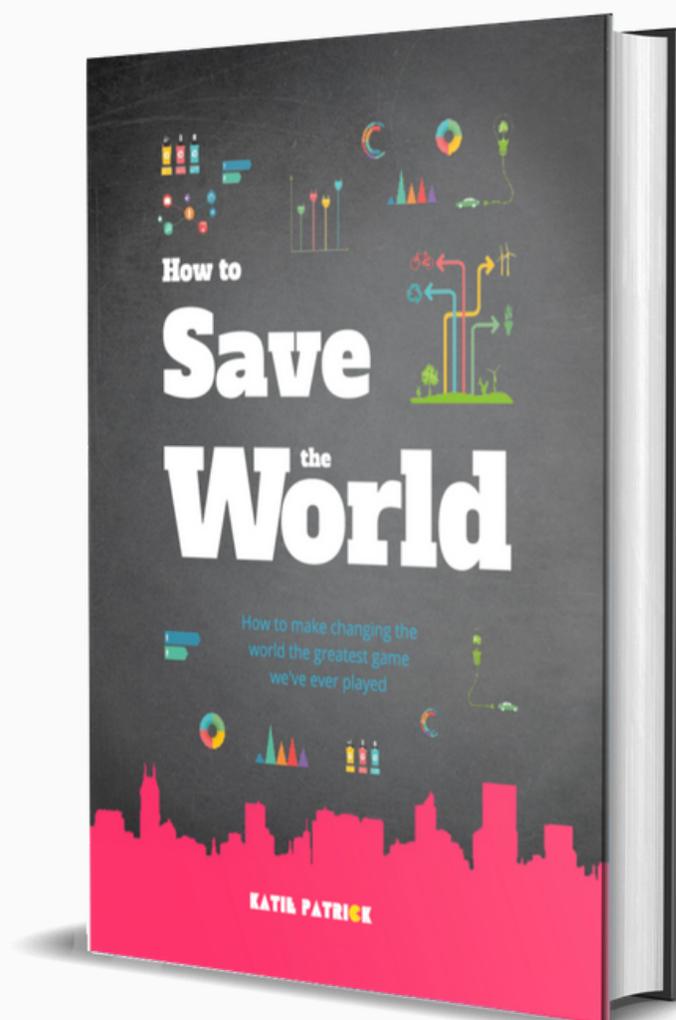
THIS BOOK WILL TEACH YOU HOW TO GAMIFY THE PLANET

“An urgent and useful guide for anyone who seeks to make a difference. It will change your work for the better.” — Seth Godin, author, *This is Marketing*.

Ranked by *Forbes* as one of the top five books for social change entrepreneurs, *How to Save the World* teaches social and environmental change professionals how to implement powerful techniques from the fields of game design, behavioral psychology, graphic design, data science, and storytelling that are not only proven to have impact, but also can make any project *fun*.

Its 10-step framework of exercises, tutorials, and case studies will teach you the art of changing the world—and it’s often not what you think. Did you know, for example, that just putting a sign above a recycling bin showing people the number of cans inside increased the recycling rate by 67 percent? Or that when people standing in line at a café were told that the customer before them had ordered a vegetarian meal, this simple intervention doubled the proportion of vegetarian meal orders?

As you implement these academically researched and measurement-driven techniques, *How to Save the World* will also drive you to dig into your personal creativity. You will unearth your own greatest ideas, the ones that most shift the numbers on the causes you care about, and experience the joy and satisfaction of seeing your work really, actually change the world - every single day.



NINE SECRETS TO GAMIFYING THE EARTH

How do you design a game to save the Earth?

Katie Patrick's book *How to Save the World* takes a deep dive into how to apply game design techniques to environmental issues.

Here are the main concepts:

1. **Feedback loops** - collect real-time data and show it to people.
2. **Agency** - show the data to people in a way they can influence.
3. **Disclosure** - make the data public.
4. **Social Comparison** - compare household to household.
5. **Behavior mapping** - identify the specific behavior to influence.
6. **Progress tracking** - track a single "God" metric towards a goal.
7. **Color grading** - add color to the data, red meaning bad and green good.
8. **Reward system** (of the brain) - that's "giving the brain a cookie"
9. **Ambient messaging** - show data publicly on walls and billboards.

"I wrote this book as a manual to teach social impact entrepreneurs how to apply the techniques of game design, data feedback loops, and behavioral psychology to make important changes possible - and to show how we really can make saving the world as fun as a game."

KATIE PATRICK

ENVIRONMENTAL ENGINEER + DESIGNER

AUTHOR OF HOW TO SAVE THE WORLD



WHAT I DO

I help social impact entrepreneurs and sustainability professionals (anyone wanting to seriously change the world) make real and measurable change using data, game design, and behavioral psychology.

BUT REALLY . . .

I have a weird gift for coming up with crazy ideas to save the Earth that I share on katiepatrick.com/designs.

I design interfaces for "Fitbit for the planet" software and games.

I'm an evangelist for bringing creativity, optimism, and imagination into the craft of saving planet Earth.

KEYWORDS

Design thinking, games for change, behavior change psychology, social impact, sustainability, Fitbit for the planet, imagination, cybernetic earth, ideas, problems with environmentalism, creative purpose, Silicon Valley, startups, action design, measurement.

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HOW I CAN HELP YOU MAKE A GREAT ARTICLE/EPISODE

In a world often mired in frustration, fear, and doom about the future of the planet, most of us want to make a real and meaningful impact. It can be done, however — most impact entrepreneurs (even experienced CEOs) make big mistakes because they don't know how to harness the motivational drivers that get people to *do stuff* — like changing carbon laws, planting trees, or quitting plastic etc. I've collected a kaleidoscope of fascinating evidence-based techniques in my new book, *How to Save the World*, that will help anyone who wants to seriously change the world apply this fun 10-step design-thinking process based on academic research of *what works*. I'm massively inspired to bring creativity, optimism and imagination to the forefront of the social change conversation — and to share the neuroscience that backs up why it's the missing piece in our quest for a better world.

THEMES I LOVE TO WORK ON

- What awesome stuff can we learn from game designers to save the Earth?
- What is the "Fitbit for the Planet" movement?
- What are some of the big mistakes that the social impact community are making?
- Why is optimism, creativity and imagination so important to changing the world?
- How is measurement and data fundamental to the creative process?
- How can we use the latest technology such as sensors, satellites, software, artificial intelligence, augmented reality, and data science to solve big world issues?

FEATURED IN

VOGUE

COSMOPOLITAN

BBC
RADIO

BRW.

The
Sydney Morning
Herald

cream

ABC NEWS

Courier & Mail

sky NEWS

RadioNational

triplej

THE.ash. AGE

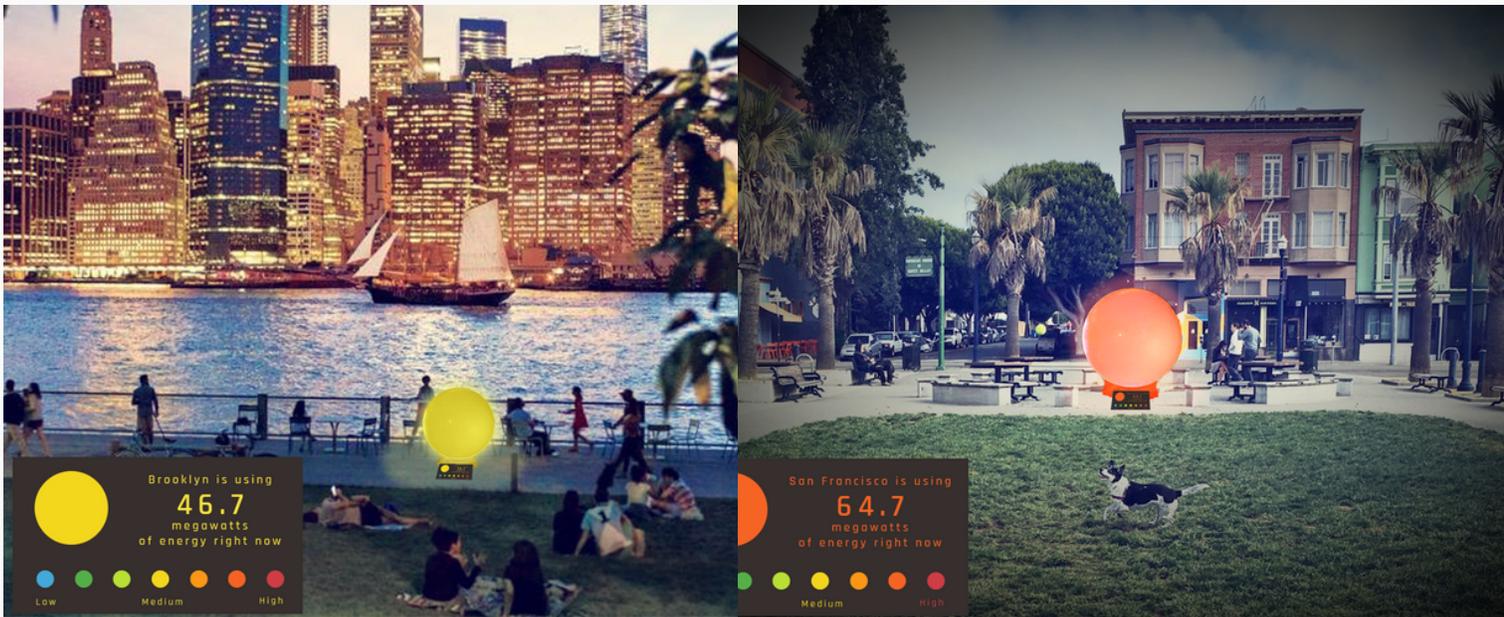
EDUCATION

Royal Melbourne Institute of Technology
Bachelor of Environmental Engineering

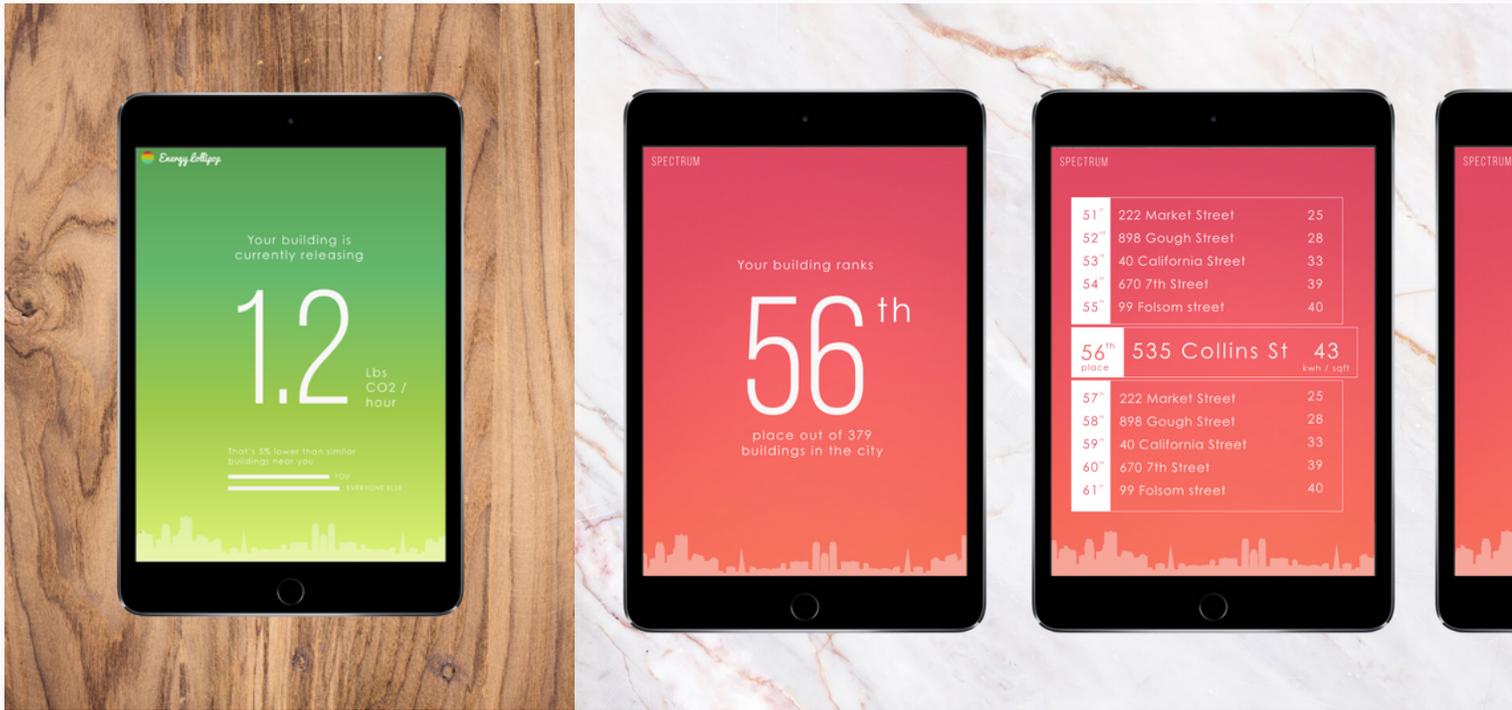
EXAMPLES OF "FITBIT FOR THE PLANET" GAMIFICATION DESIGN



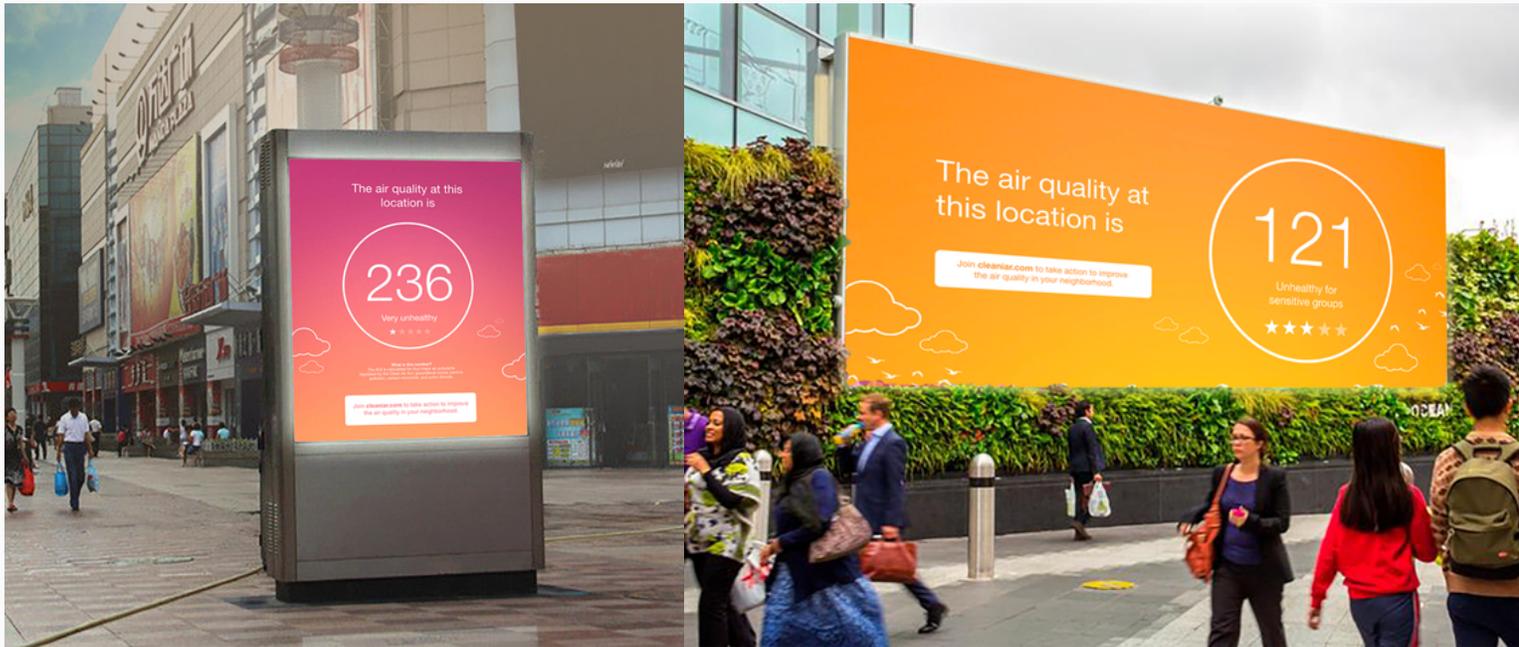
Screens that publicly show the real-time indoor CO2 concentrations in classrooms and encourage students and teachers to open a window and let in fresh air.



Public orbs that show the city's CO2 emissions in real-time, represented as a color, as a form on public art and environmental behavior change.



Public digital displays on office buildings that show the real-time CO2 released and the rank and comparison to other local buildings.

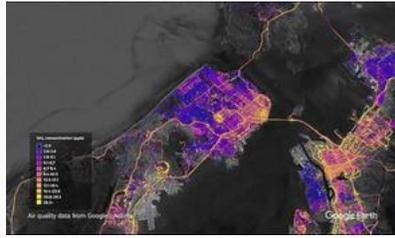


Public digital displays that show the air quality in the exact location with data gathered from a sensor on the exact location of the screen.

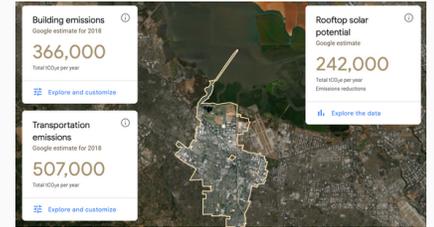
SOME COMPANIES BEHIND THE EARTH OS



Planet has launched 150 small satellites that image the entire Earth every day @planetlabs



Aclima is taking hyperlocal air pollution data and making maps @aclima



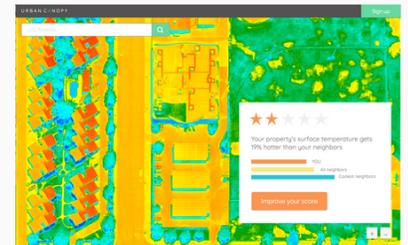
Google Environmental Insights Explorer automatically calculates emissions from building and transportation



TraCE is a project by Al Gore to collate greenhouse gas data @trace



Energy Lollipop shows local CO2 emissions in real-time on a public digital screen @energylollipop



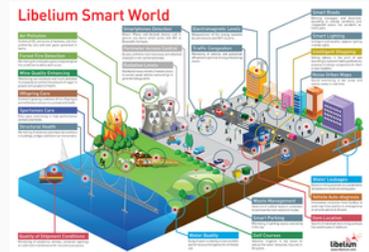
Urban Canopy takes high resolution thermal images of urban heat in summer @urbancanopy_us



Global Fishing Watch maps the world's fishing vessels using satellite images and boat GPS @globalfishwatch



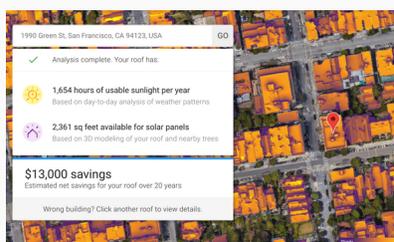
Conservify makes hardware and software to collect and share conservation data @conservify



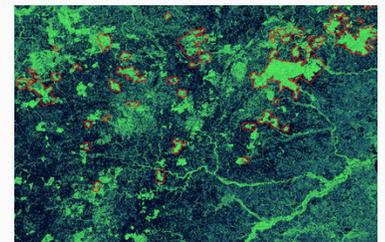
Libelium creates sensors for smart cities and the environment @libelium



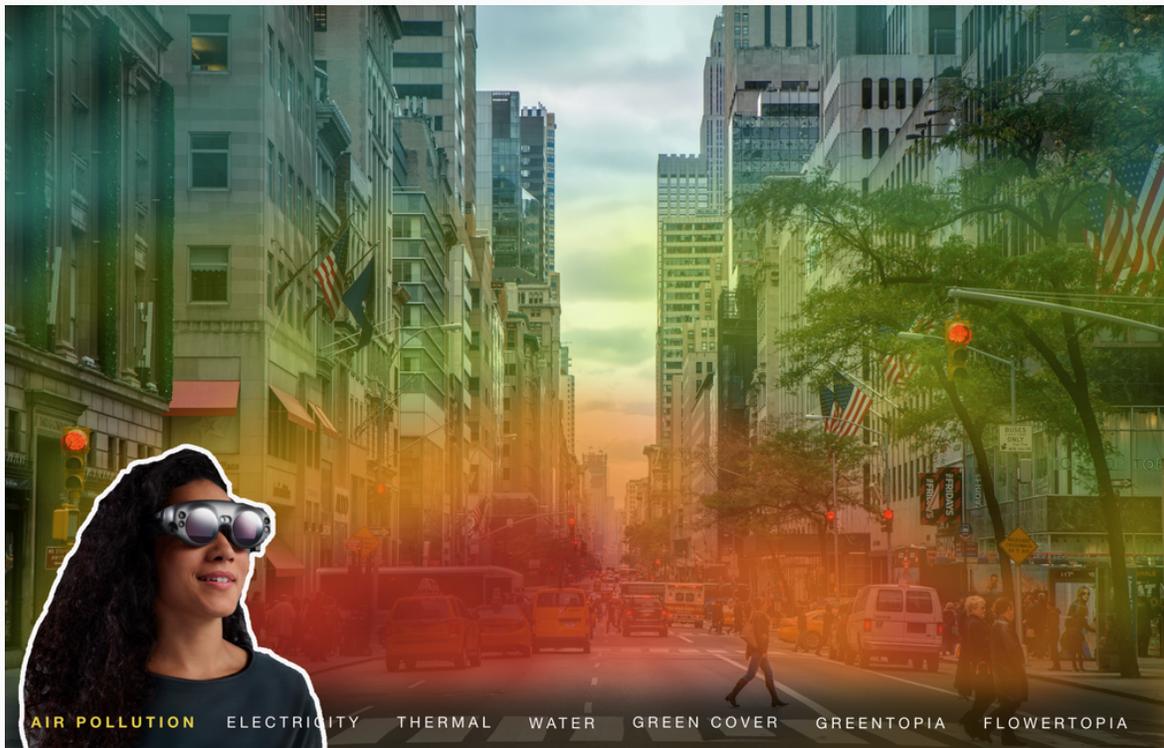
Magic Leap has been creating a real-time AR/VR simulation of Los Angeles using smart city data @magicleap



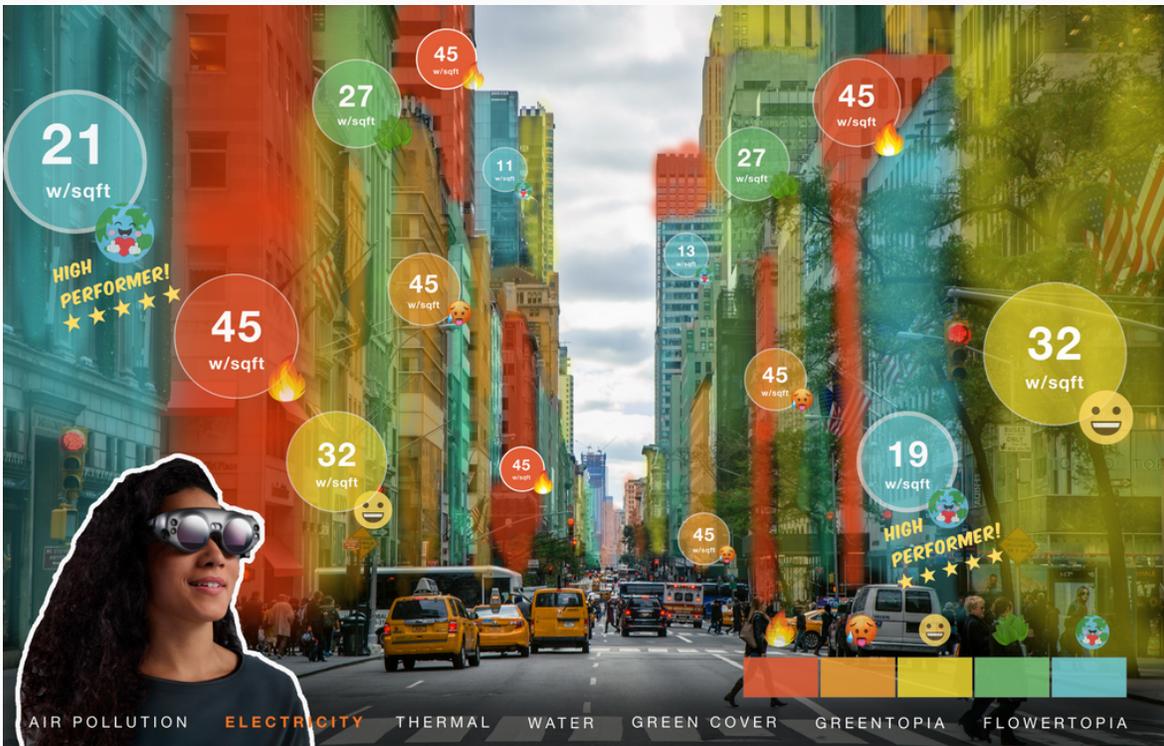
Google Project Sunroof shows the potential solar power available for any address using advanced image processing of satellite images



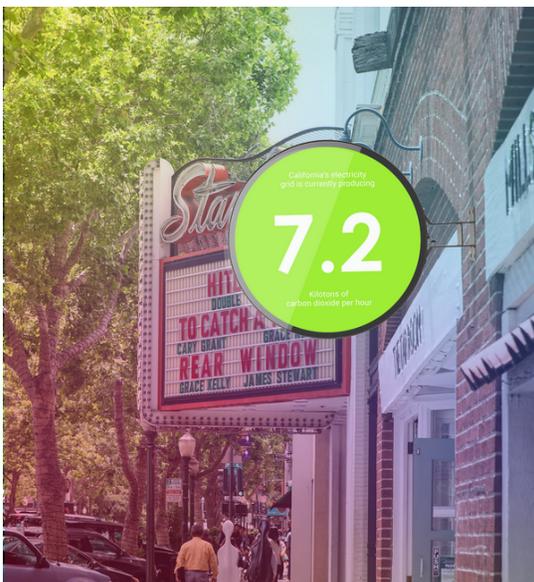
Pachama using machine learning and AI of satellite images to analyze the carbon sequestration of forests for carbon offsets @PachamaInc



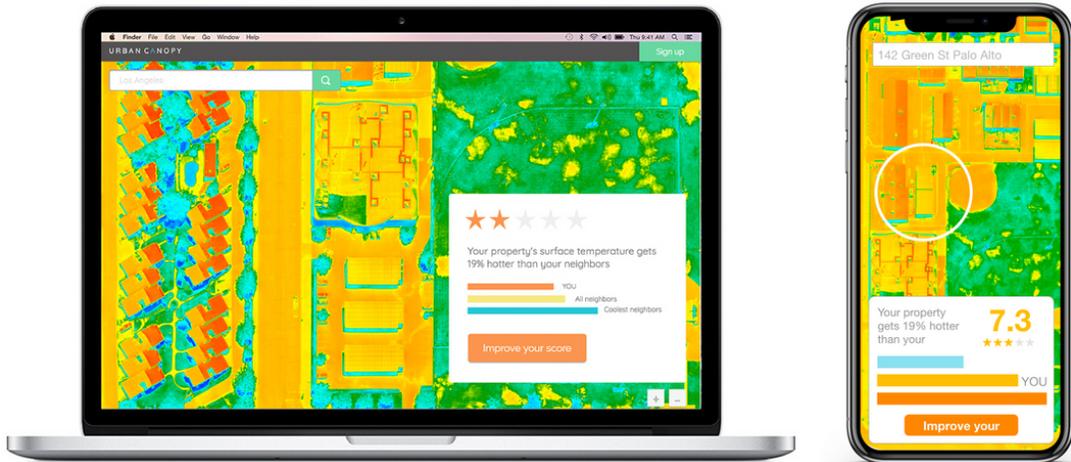
Magic Leap glasses display air pollution via a network of sensors in real-time.



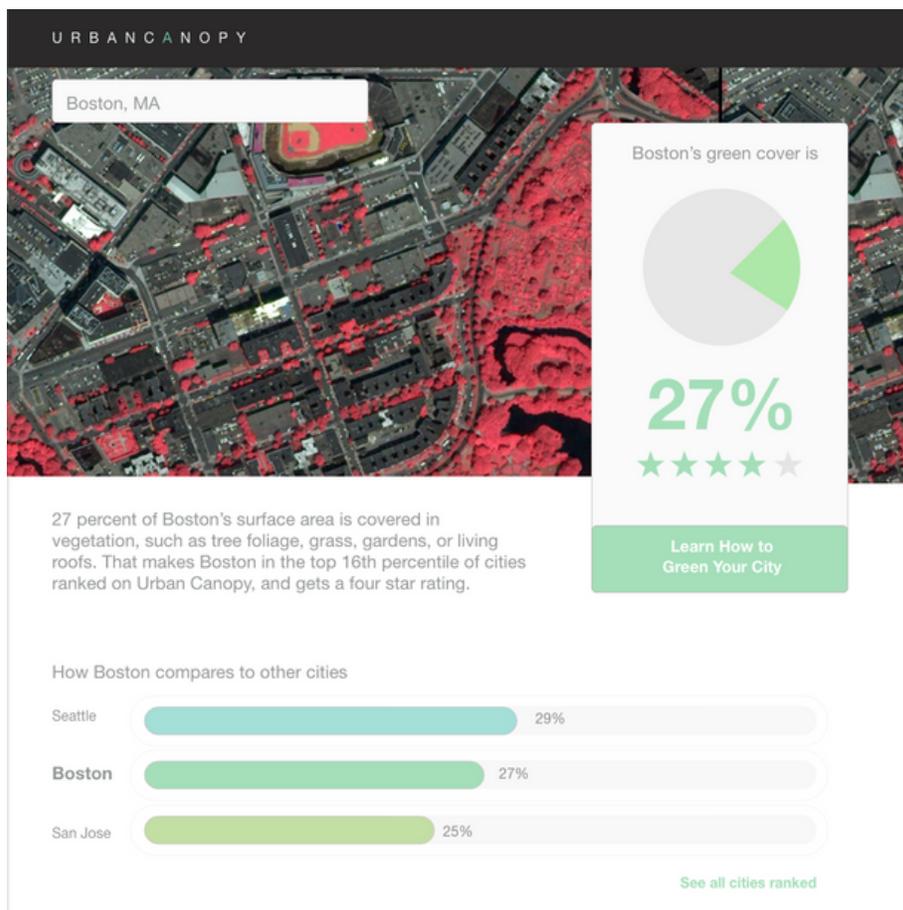
Magic Leap glasses display the CO2 emissions from commercial buildings on a city street, incorporating gamification to reward greener buildings and nudge poor performing buildings.



Neighborhood CO2 emissions (generated from electricity) displayed in public outdoor spaces in a community campaign to bring emissions down towards zero and bring about a behavioral response to the grid's peak CO2 times of day.



High resolution thermal images of the surface temperature of cities so people can see hot surfaces such as roofs, roads, and carparks. Properties are compared to each other and given a star rating for thermal qualities using gamification design.



Mapping urban green cover from satellite data and calculating the percentage of green cover each city exhibits, then using gamification design to compare cities to each other by rank, and rewarding cities that make the most progress on increasing their green cover.