SUSTAINABILITY & AI

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SPEAKER

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01 Climate AI Report

02 Sustainability Data Science Challenge

03 Questions & Discussion

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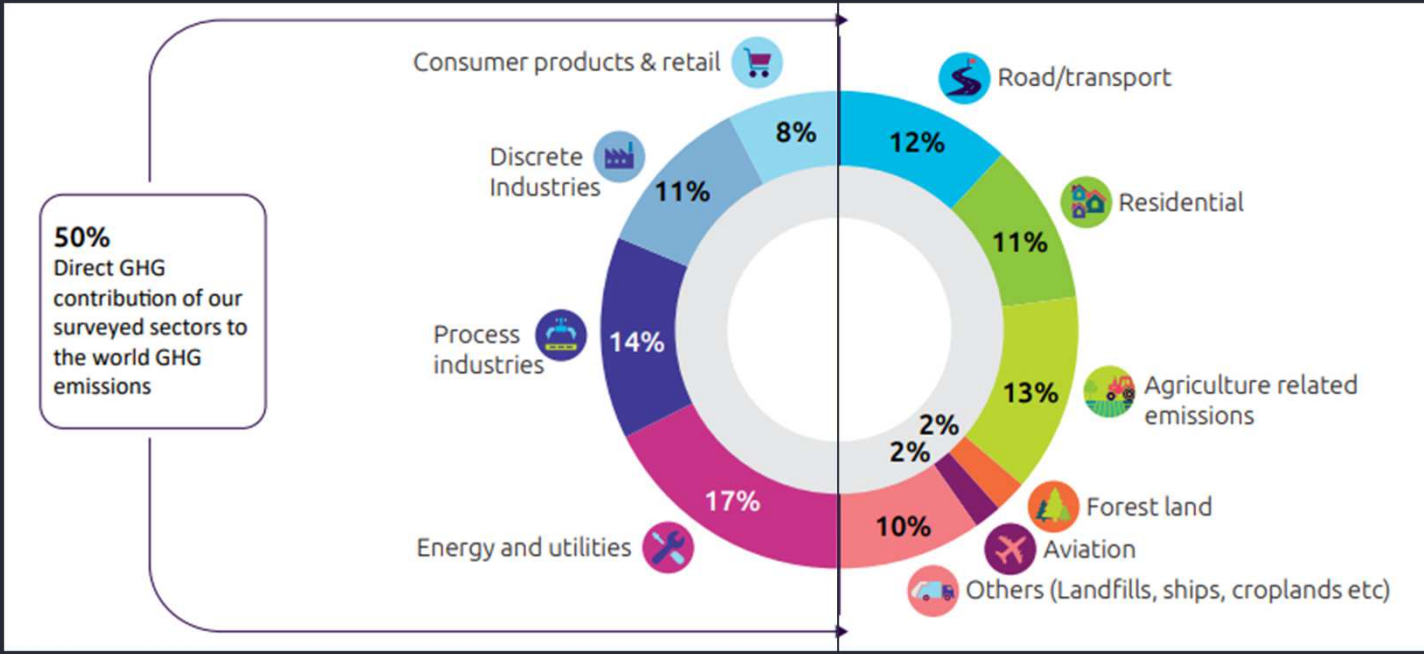
CLIMATE AI - GREENHOUSE GAS EMISSIONS DISTRIBUTION



Source: Capgemini Research Institute, AI in climate change survey, N = 400 organizations.

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CLIMATE AI – KEY ACTIONS FOR CLIMATE AI

Source: Capgemini Research Institute, AI in climate change survey, N = 400 organizations.

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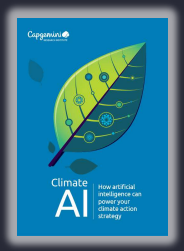
CLIMATE AI – MATURITY LEVEL OF COMPANIES

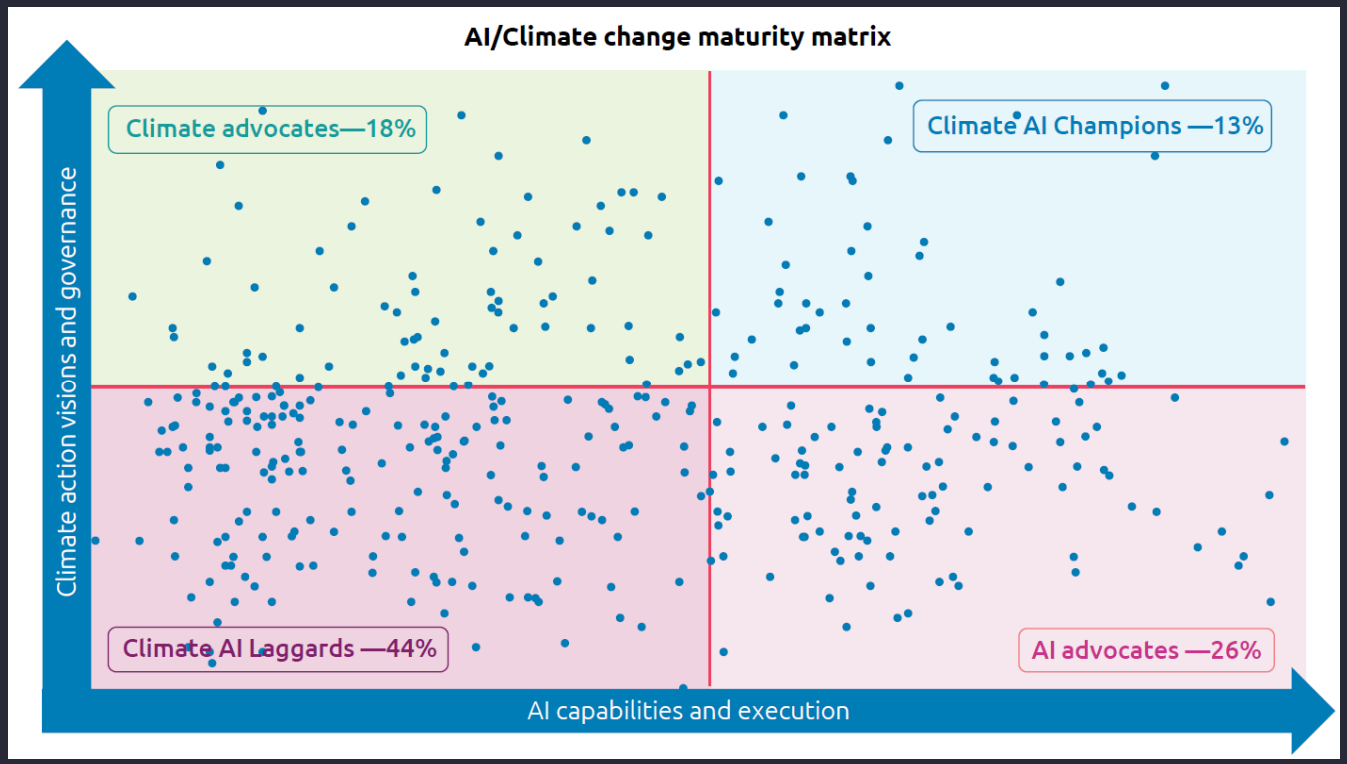
Climate Action Vision & Governance

- Climate Vision
- Execution & Governance
- Climate Action Alignment

AI Capabilitites & Execution

- AI Capabilities & Talent
- Scaling Ability
- AI Investment & Propensity





Source: Capgemini Research Institute, AI in climate change survey, N = 400 organizations.

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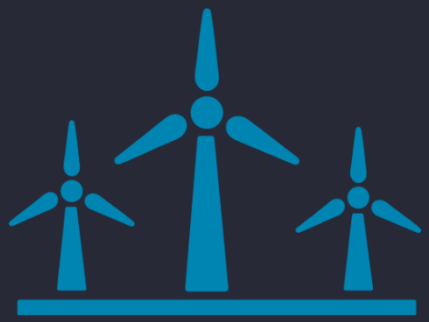
AI CLIMATE ACTION USE CASES

Google – Energy efficiency
AI can help improve energy efficiency and use cleaner electricity sources when available



General Motors – Maintenance
Use image classification tool on nearly 7.000 robots to detect component failure

ZenRobotics – Waste management & segregation
AI for effective waste management, segregation and recycling to reduce need of resources & avoid wastage

Source: Capgemini Research Institute, AI in climate change survey, N = 400 organizations.

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SUSTAINABILITY DATA SCIENCE CHALLENGE

THE OBJECTIVE

We support Austria‘s leading corporations to **reduce their carbon footprint** and to determine their **impact on biodiversity** using **advanced analytics**.

in partnership with

BIG A1 Verbund

Capgemini UBAG Microsoft

THE CHALLENGE

The data

(1) aerial pictures
(2) weather data
(3) biodiversity scores
(4) carbon scores
(5) object labels

external data sources can be used.

The expectation

Train a computer vision model to identify different surface types.

Solve three cases:

- **Carbon footprint**
- **Biodiversity**
- **Sustainable energy**

The tools

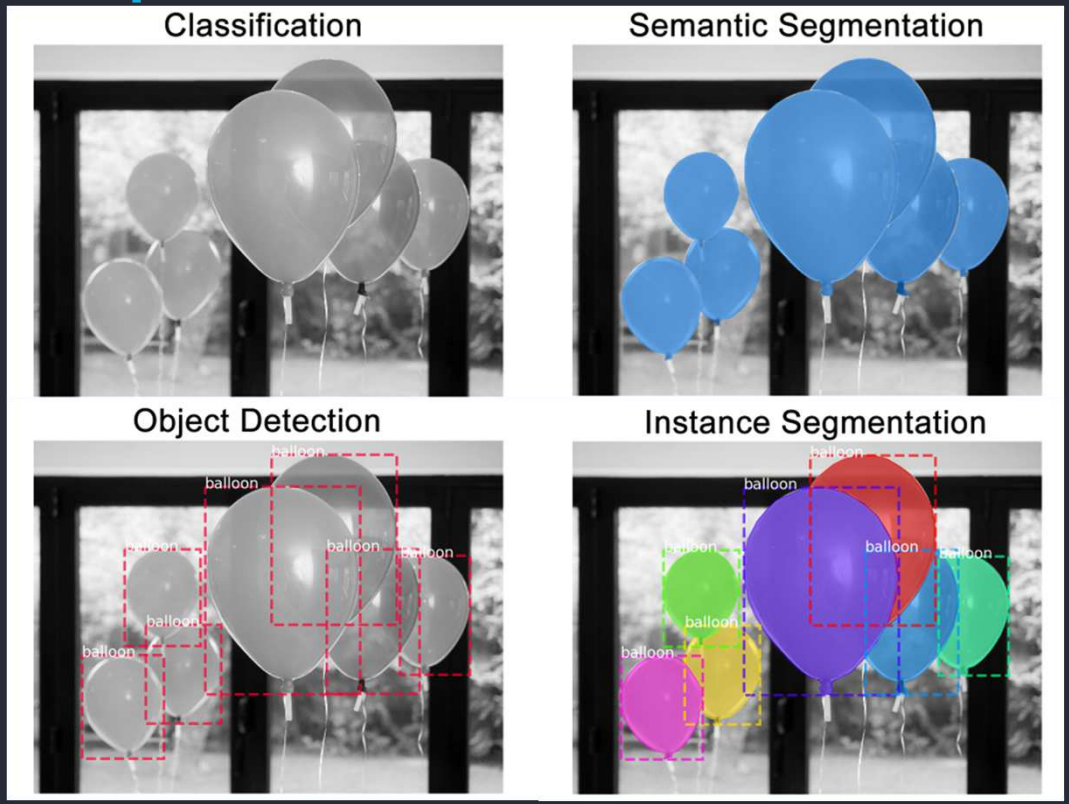
Microsoft Azure
Platform to train and test the model

Microsoft Teams
Platform to ask questions, share content and collaborate

Capgemini UBAG Microsoft

COMPUTER VISION & NEURAL NETWORKS

Computer Vision Tasks



Source: https://engineering.matterport.com/splash-of-color-instance-segmentation-with-mask-r-cnn-and-tensorflow-7c761e238b46

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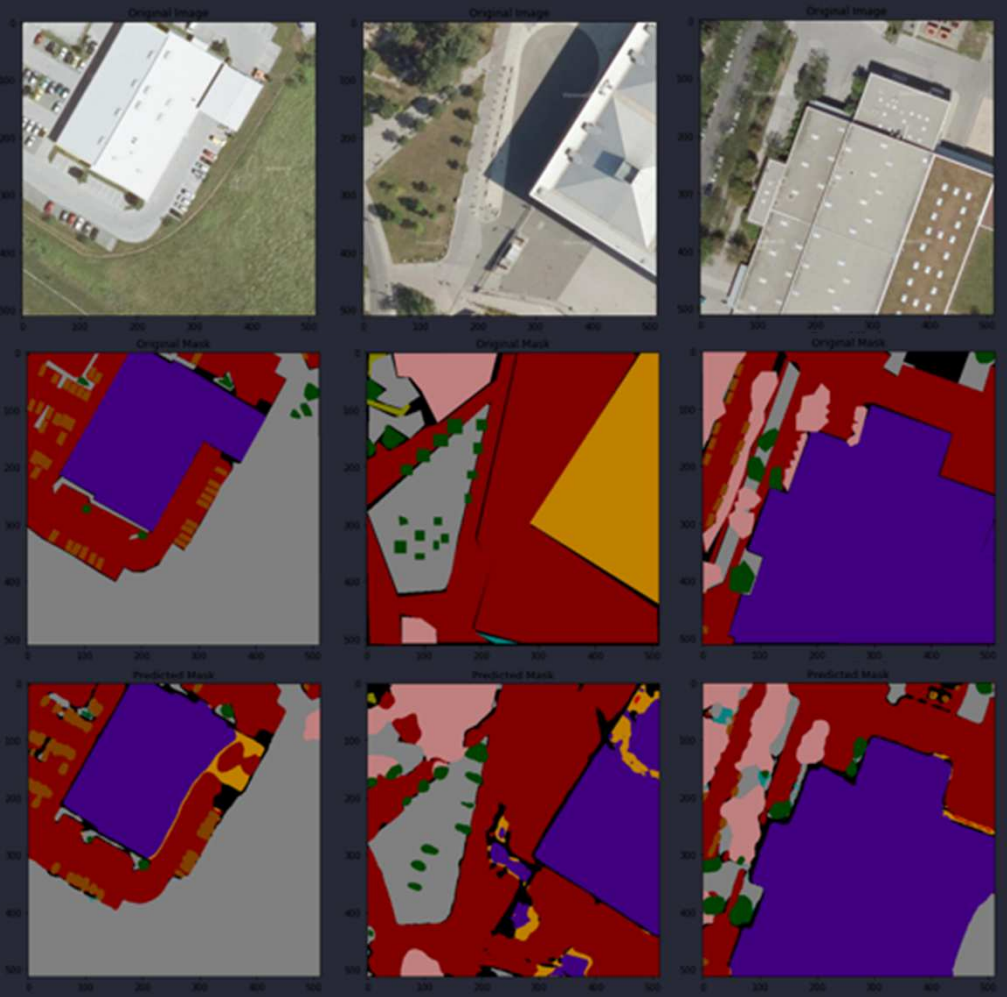
WINNING TEAM: RESULTS

Provided images

Provided masks

Predictions



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