



How AI helps preserve life

Filip Stachura, Infoshare 2022



October 6th 2022



CEO

Filip Stachura



Apppsilon



**Remote-only Team of 80+
Specialists in 20+ Countries**



**We work with
Fortune 500 companies**



10 years ago



Google+

UBS

Microsoft

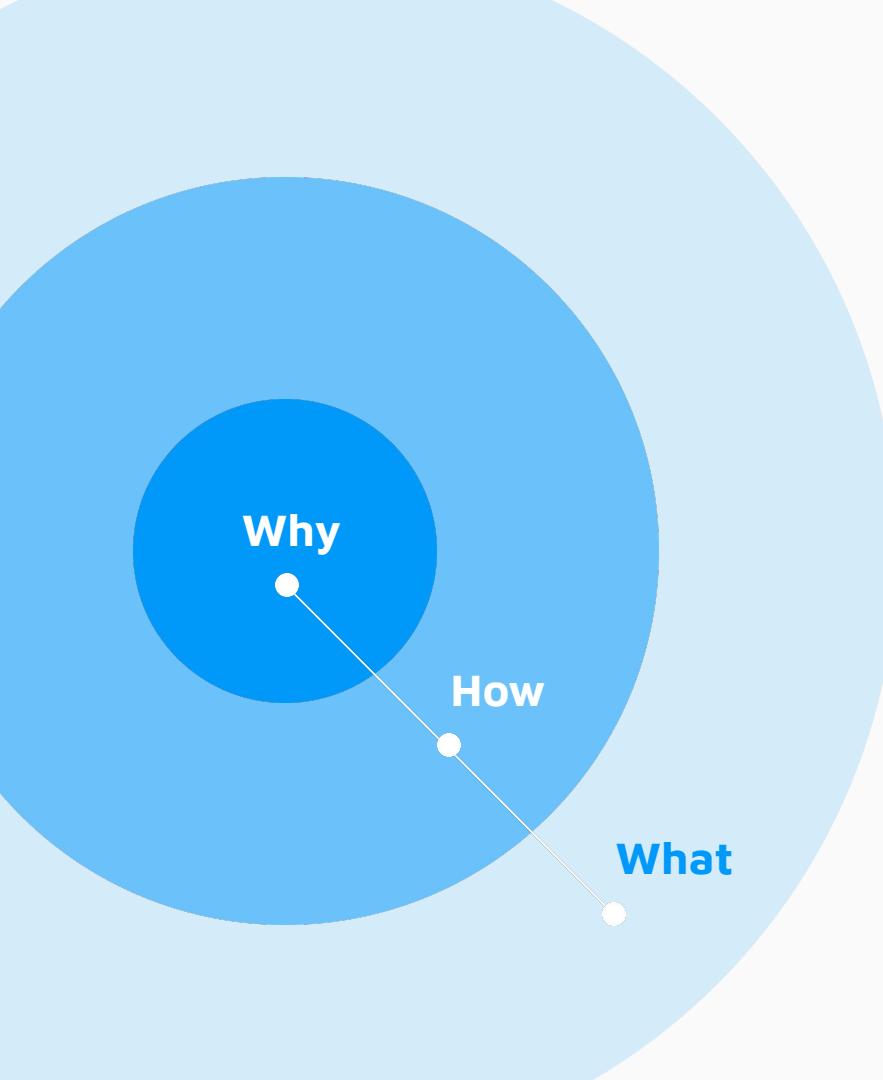
Google

Bank of America

Our goals as founders



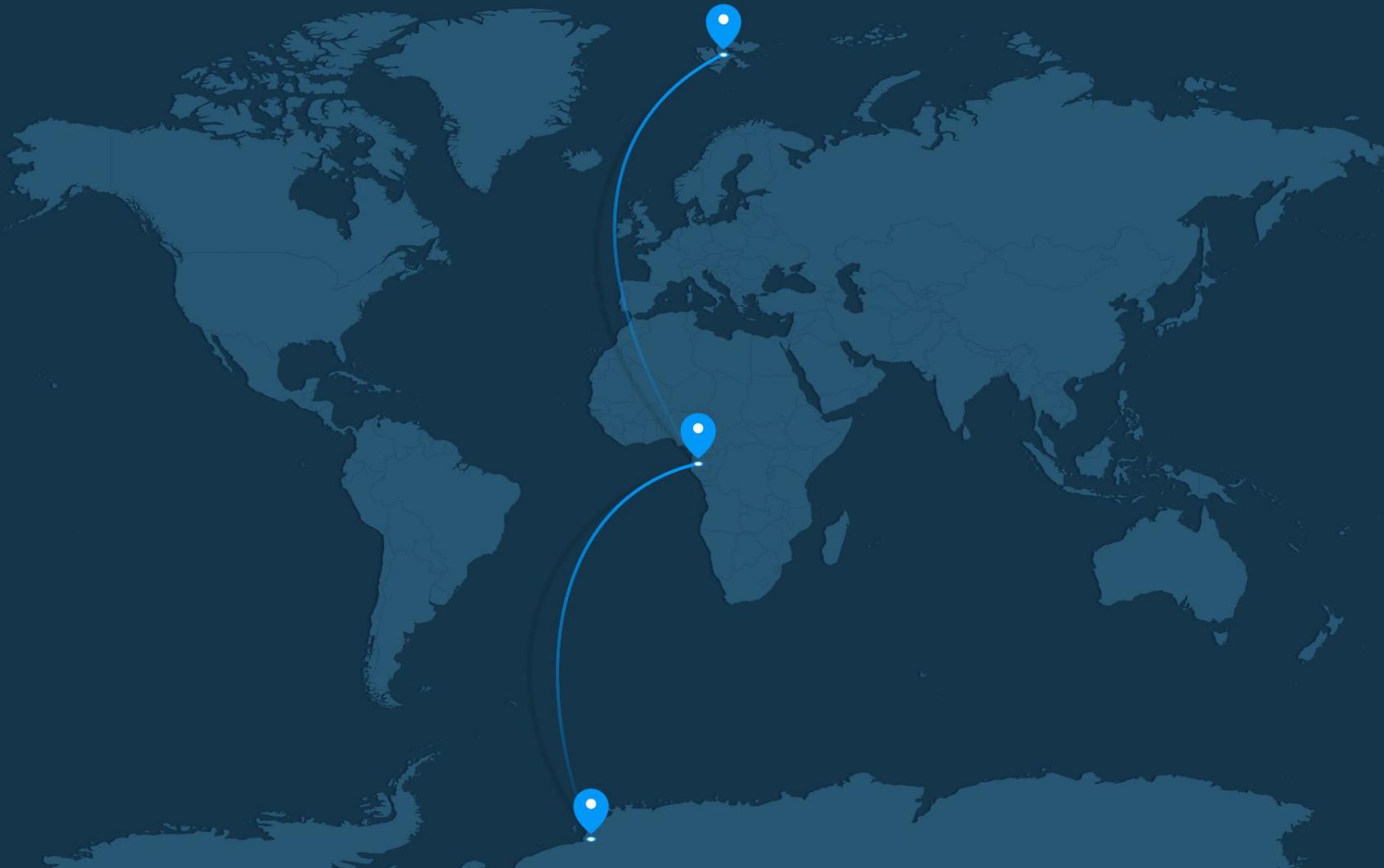
- We want to **work together**, with people we **trust and like very much**
- We want to **work in Poland**, close to our **families**
- We want to **build a workplace for ambitious people**
- Our dream is to build a Polish **recognizable brand**
- Our dream is to have a real, positive impact on people's lives



Golden circle

**Advance technology to
preserve and improve
human life.**





Story #1

Robin Whytock

Postdoctoral Research Fellow,
University of Stirling



UNIVERSITY OF
STIRLING





Gabon

EQUATORIAL GUINEA

GABON

CONGO



Brice Roxan Momboua,
Research Assistant in the National Park of
Lopé-Okanda

He's been working with camera traps since 2016.

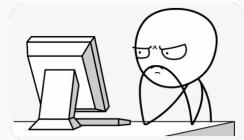


1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

Their process



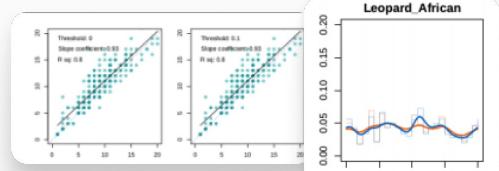
Data



Weeks



Information



Analysis

 Appsilon/mbaza

Mbaza is an open-source app built to aid bioconservation efforts.

It classifies images fully offline, with the use of existing laptops of park rangers and ecologists.

It uses exceptional AI models (bit.ly/mbaza-paper) trained on a dedicated and amazing dataset.

With Mbaza



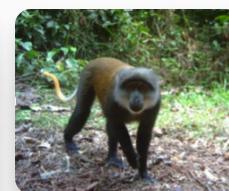
Data



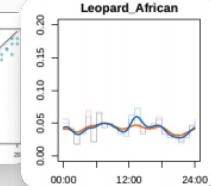
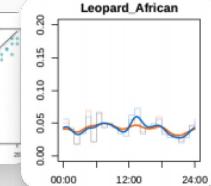
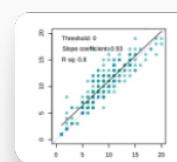
A day



Information



Analysis



1.6 mln images!



However, **most** of
the images were
empty...



Actually, they **all**
contain animals!



**Can you find the animal here?
Our model did!**



Credit: eBird

Nkulengu Rail





Home

Media tools

Detect animals

Explore results

Data file: relative.csv

[← Change data](#)[↻ Update events](#)[↑ Export](#)

By species

 Select...

By station

 Select...

By camera ID

 Select...

Certainty range

 0% 20% 40% 60% 80% 100%

239

Images classified



222

Images with animals



15

Species found



4

Rare species found



4

Overridden predictions



0

Events

Size of circle corresponds to the number of detected species (species richness). Click on a station to see details.



INDEPENDENT

Stop the Illegal Wildlife Trade

Stop the Illegal Wildlife Trade: How artificial intelligence has become the latest conservation tool

We are working with conservation charity Space for Giants to protect wildlife at risk from poachers due to the conservation funding crisis caused by Covid-19. Help is desperately needed to support wildlife rangers, local communities and law enforcement personnel to prevent wildlife crime

Arjun Neil Alim • Wednesday 10 February 2021 10:58 • [Comments](#)



AI has helped researchers identify dozens of species in the Congo Basin (ANPN Gabon)

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Five ways AI is saving wildlife - from counting chimps to locating whales

Artificial intelligence has been identified as one of the top three emerging technologies in conservation, helping protect species around the world



A family of chimpanzees photographed in the Congo basin. An AI algorithm enables analysis of up to 3,000 camera trap images an hour. Photograph: ANPN-Panthera

**Charles TROUVE**

COO at Sustainable Landscape
Project, Gabon



Mbaza has allowed me to really simplify, improve and secure the work of monitoring mammals, bring down the heavy costs and workload of organizing field missions, as well as lower risks for the staff working in the forest. The strength of Mbaza, I think, is its simplicity of use which is within the reach of anyone.

**Brice Roxan MOMBOUA**

Research Assistant & Deputy
Manager, Lopé-Waka
Biomonitoring Project



This software can classify thousands of images in less than 1 hour. We save a lot of time in data analysis and the prediction of species identification is impressive with 90% accuracy. It's a great tool. I don't need the internet to do the identification and I can do it in the forest.

Story #2

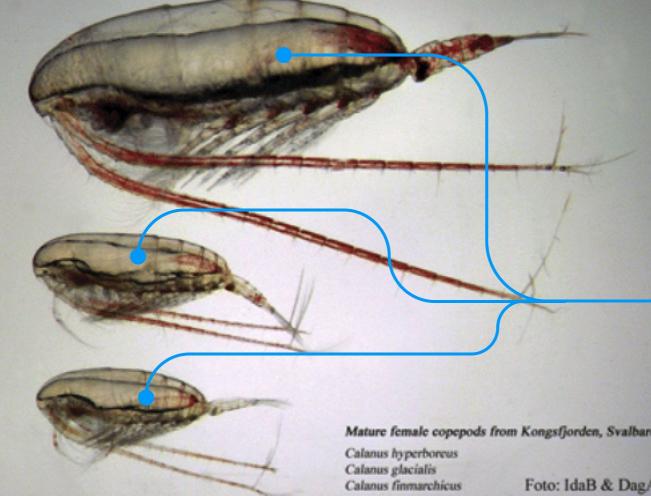
Plankton

the beginning and end of
(almost) all marine things

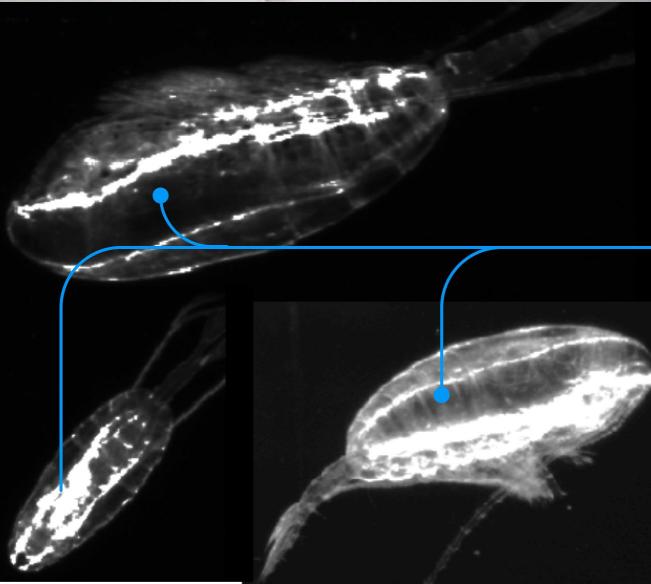


Partner with domain experts.

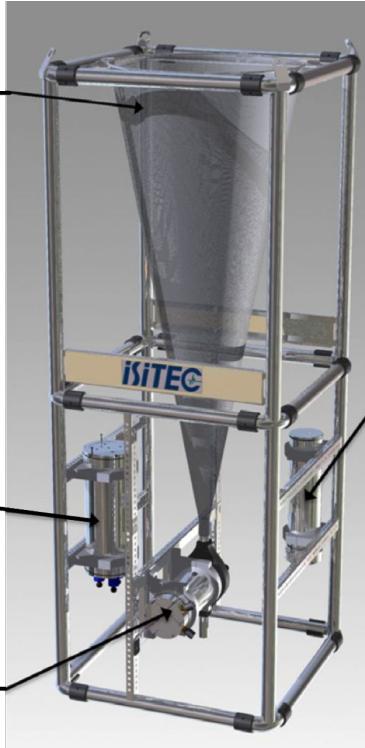




Berge et al. 2012, Fig. 1



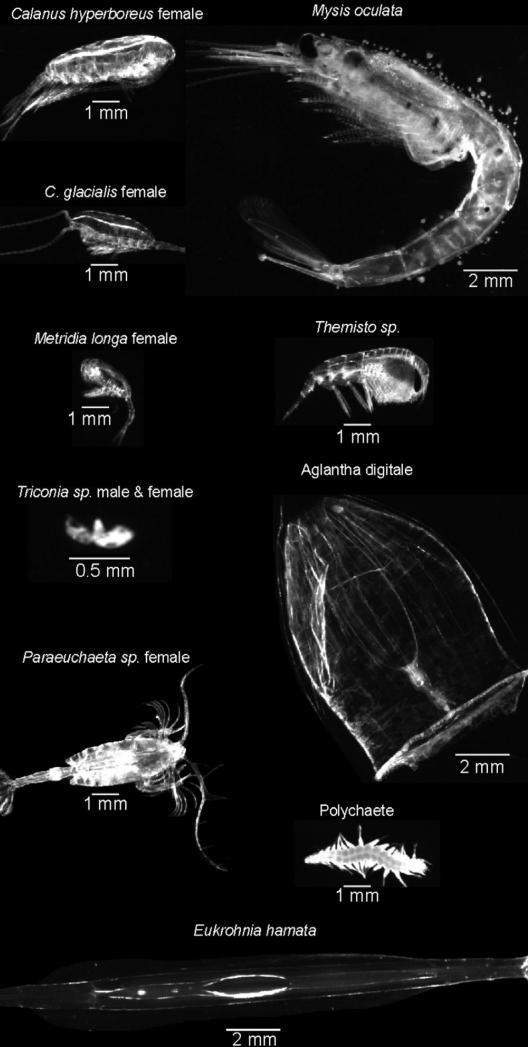
Plankton concentration net



Battery



Cod end attached to outflow of camera



Copepods

Annotation

Overlap

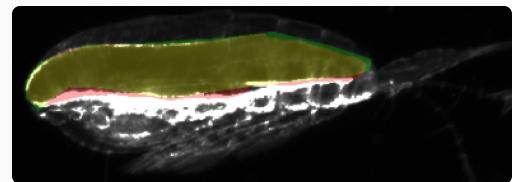
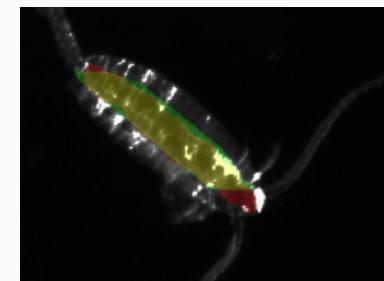
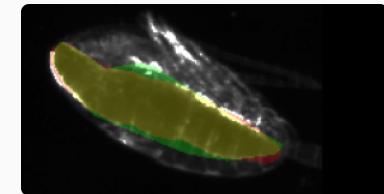
Prediction

Results

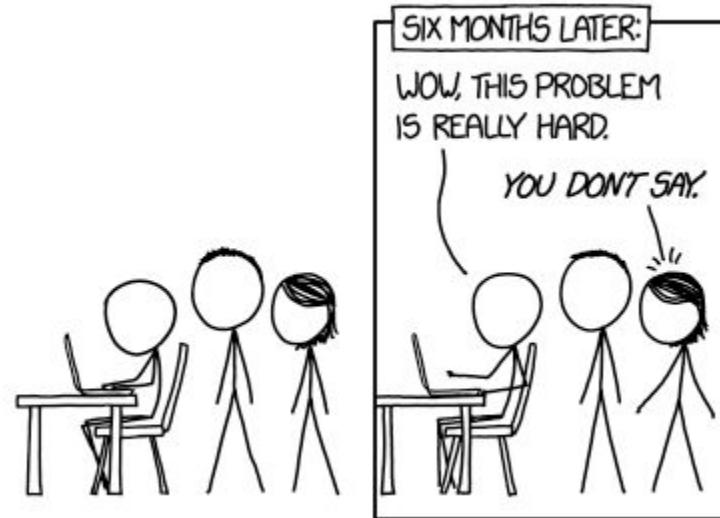
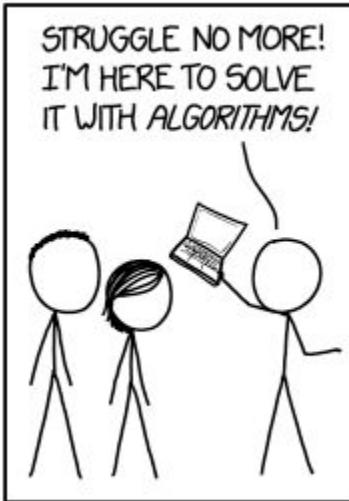
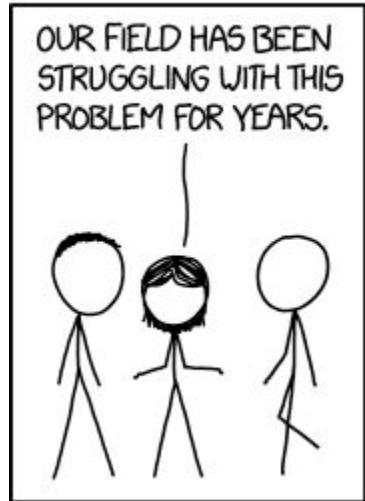
We can predict lipid mass in a sample with accuracy of up to 98% based only on pictures.

Delivered results that prof. Maps wants to publish.

Our solution might be a breakthrough in monitoring marine ecosystems!



Partner with domain experts.



Story #3

An overview of the Arctowski station - a year round research facility in the Antarctic, run by scientists from IBB PAS.



Photo: Marek Figielski



Cormorants are important



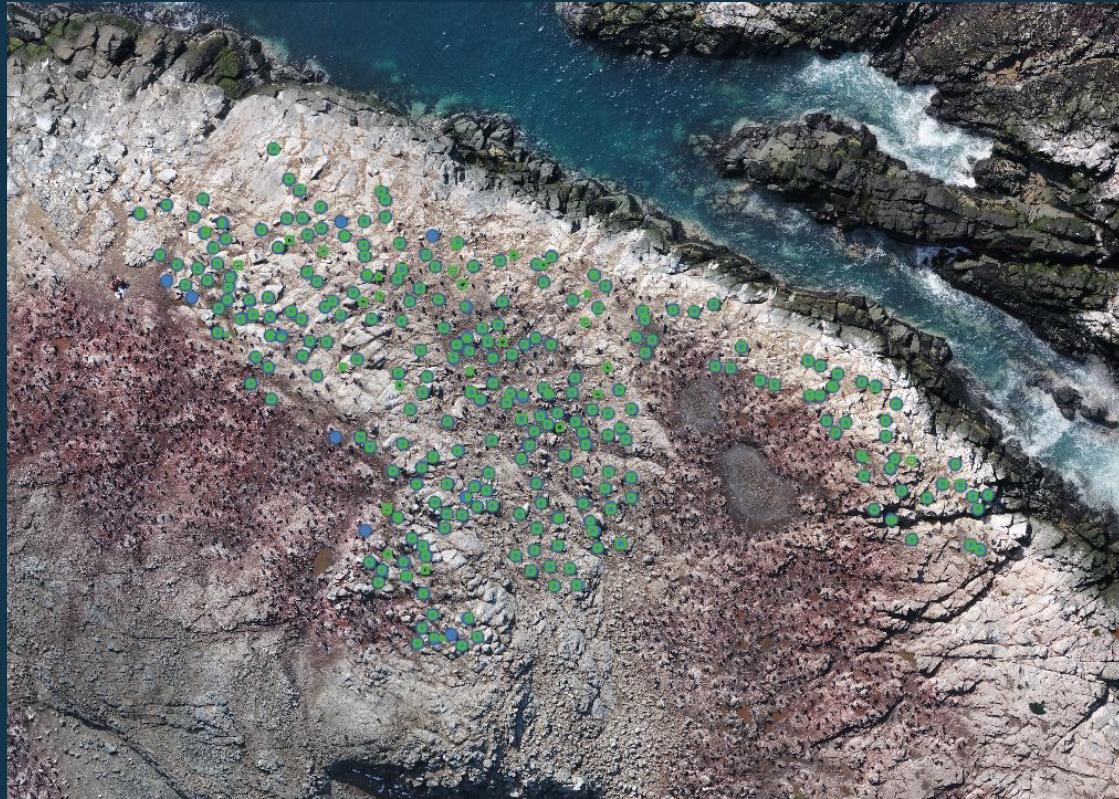
The Antarctic shag (Leucocarbo bransfieldensis)

Count all the penguins and cormorants



Count all the penguins and cormorants





Nests of cormorants are marked with **blue dots**, the predictions of our model are marked with **green boxes**.

“Apppsilon’s ML technique has great potential to shift the way we monitor Antarctic fauna in the future.”

Robert Bialik, Head of Antarctic Biology Department, Prof. of Institute of Biochemistry and Biophysics PAS

What worked for us?

Dream 

→ Best effort
together 





**Advance technology to
preserve and improve
human life**

Talk to us!

[Wanna join us?](#)



Paulina Kaczmarczyk

Head of People



**Joanna Moćko-
Łazarewicz**

Community
Manager



Andrzej Białaś

Data 4 Good
Leader



Paweł Przytuła

VP of
Engineering
Co-founder