OceanFive

– Yuki Yoshiyasu, Leon OuChen, Anthony Dong, Aidan Cushman, Oliver Hurst
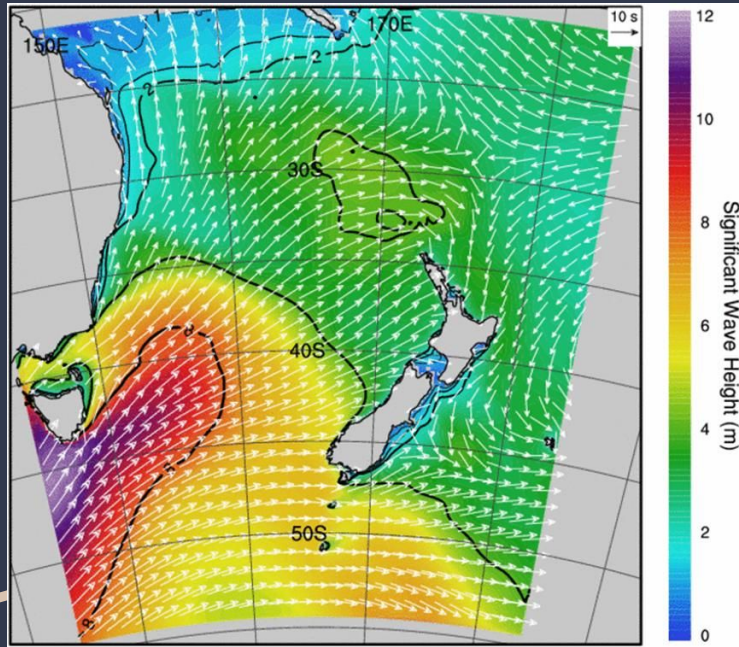
Preserving biodiversity from our activities

AI Hackathon

Plastic pollution is a problem.

Our Solution

- Data model to predict rubbish found on our shores by using wave data

- Helps clients identify the pollution dense areas so they can allocate resources more efficiently.

- This links back to preserving and bolstering biodiversity by protecting our marine ecosystem.

Our AI model performances

Fully connected Neural network - MSE 360

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Linear Regression — Mean Squared Error: 1403.27, R^2 Score: 0.46
Random Forest — Mean Squared Error: 995.89, R^2 Score: 0.62
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Random Forest: Actual vs Predicted Rubbish Count
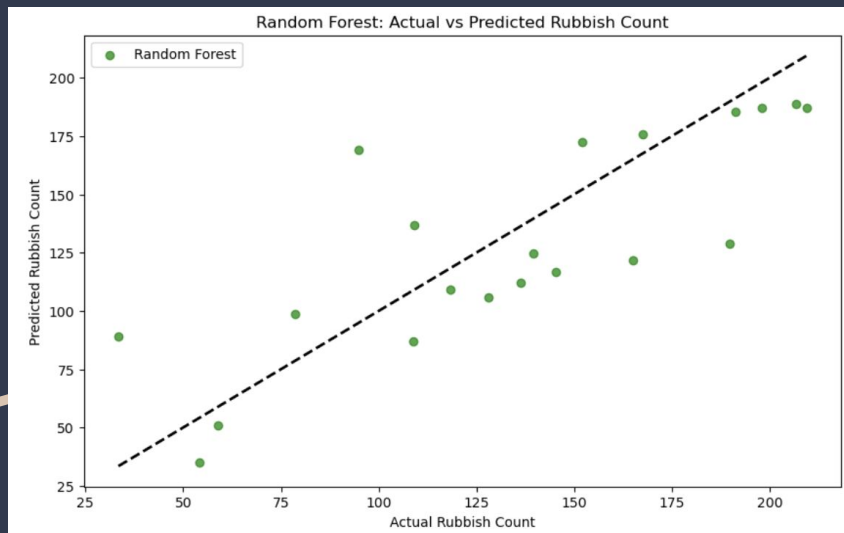
	Region	Water_Temperature	Wave_Direction	Wave_Speed
0	2	17.013002	150.267961	0.549671
1	2	18.453534	79.958812	0.486174
2	1	17.735343	43.151532	0.564769
3	3	16.720169	121.541462	0.652303
4	0	16.625667	339.447493	0.476585
...	...	...	...	...
95	0	14.564138	87.836272	0.353649
96	3	15.163164	350.283800	0.529612
97	2	17.010233	141.515181	0.526106
98	2	16.018491	321.136760	0.500511
99	0	16.462103	227.209905	0.476541

Next steps/ Our Ideas Impact

Cultural Significance of the coast – Kaitiakitanga

- NIWA's extensive data
- Regional data so we can map out the points to locations

Why should YOU care?

We want to protect the ocean for our future generations; Protection and conservation of our natural environment. So we can prolong our magnificent nature in our country.

References

Slide 2:

Image 1: https://www.rawpixel.com

Image 2: https://unsplash.com/photos/school-of-fish-in-water-BJUoZu0mpt0

Image 3: https://www.rawpixel.com

Slide 3:

Image 4: https://niwa.co.nz/hazards/waves