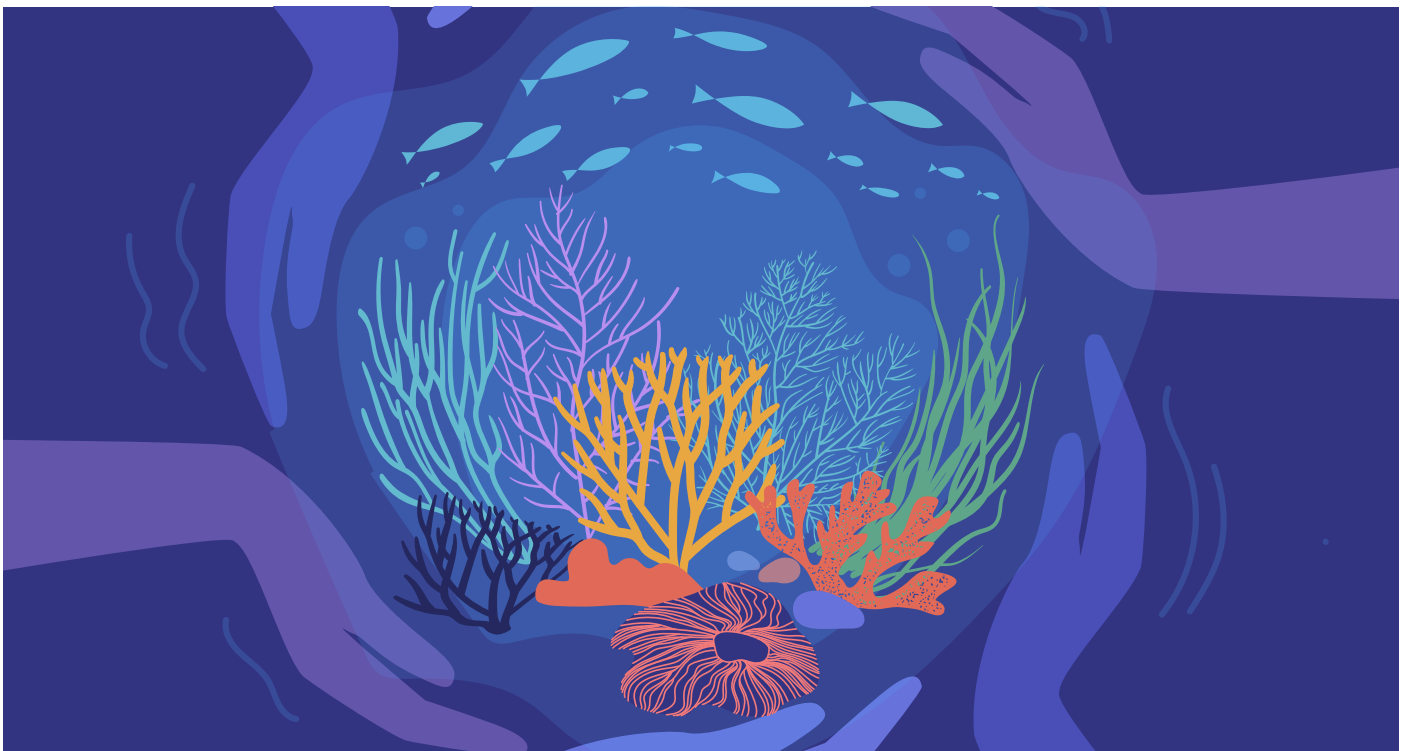


Revolutionizing Marine Conservation with Scalable Data Platform



In a bid to safeguard The Great Barrier Reef, one of Earth's most critical marine ecosystems, in partnership with Citizens of the Great Barrier Reef, we embarked on an ambitious journey to harness technology for conservation. Our mission: to create a scalable, feature-rich data platform that would drive one of the world's largest marine citizen science initiatives. It's a revolution that invites local citizens to participate actively. Through our intuitive platform and mobile app, anyone can contribute to the preservation of The Great Barrier Reef. By becoming marine citizen scientists, they're not only gaining knowledge but also becoming indispensable partners in this monumental conservation effort.

Technical Innovation:

The solution rests on a foundation of cutting-edge technology, seamlessly integrating various components of this intricate ecosystem. From capturing images of the Reef to analyzing them and distilling actionable insights, our platform leverages onboard computing devices, a robust ML platform, and a powerful data engineering infrastructure.

Core Solution Components:

Machine Learning Integration:

Leveraging ML predictions, we significantly reduced the average time for image analysis. This technological leap empowers the rapid and accurate identification of critical marine species and habitats.

Automated Flotilla Deployment:

By automating the process of setting up research flotillas with onboard servers, we've created a scalable model. This ensures that the initiative can expand seamlessly, allowing for increased data collection efforts without a proportional increase in resource allocation.

Data Platform Re-engineering:

We overhauled the existing data platform, liberating it from a complicated codebase and deployment bottlenecks. This transformation allows for greater agility in addressing evolving survey needs and accommodating diverse stakeholders.

Enhanced User Experience:

Simplified Deployment Process-

The deployment process was streamlined, unlocking new features for scientists, including the ability to track new species efficiently.

Real-time Data Analysis and Monitoring

Scientists can now monitor incoming data in real-time, thanks to the integration of Google Web Analytics and the BigQuery Data Platform. This enhances the efficiency of decision-making processes.

Mobile App Integration:

To further extend accessibility and convenience, we're recreating the capabilities of the data platform for a mobile application, ensuring stakeholders can engage with the initiative anytime, anywhere.

Optimised Image Analysis:

Previously, only **5%** of the Reef was regularly surveyed, resulting in significant data gaps. With our platform, the data coverage has surged to an impressive **15%**, providing a more comprehensive understanding of the Reef's health.

Expanded Data Coverage:

Over **100,000+** images have been uploaded to the platform for analysis and optimisation, a testament to the community's engagement and the efficacy of our solution.

Creating Actionable Insights for Scientists:

Over **50,000+** images have been meticulously analysed to date, equipping scientists with a wealth of actionable insights crucial for effective conservation efforts.

What does the future look like?

Our smart tech solution stands as a testament to the potential of technology in driving environmental conservation. By seamlessly integrating data engineering, machine learning, and automation, we've not only enhanced the efficiency of marine research but also demonstrated the tangible impact of technological innovation on the preservation of our planet's natural wonders. Together, we can continue to build a sustainable future for The Great Barrier Reef and beyond.

