

AI bird identification system has been developed.

~Contributing to the coexistence of rare wild animals and wind power generation business
with new technology <AI Bird>~

Japan Weather Association (hereinafter JWA) has developed AI bird identification system <AI Bird>. This system uses AI to identify white-tailed eagle and steller's sea eagle, which are categorized into rare domestic wild animals by the Ministry of the Environment, from high resolution video (4K) records and AI detection which distinguish them from other birds. This is the first mechanism in Japan to identify bird species using AI from images of flying wild birds.

■Summary of <AI Bird>

The AI used in <AI Bird> is learning to distinguish white-tailed eagle and steller's sea eagle which inhabit Hokkaido.

JWA conducted a field experiment in the village of Tomamae, Hokkaido, where white-tailed eagles and steller's sea eagles live. We have used a tester of <AI Bird> and gotten 94% corresponding result.

Since erroneous judgments are mainly caused by identifying the background image, it is possible to improve the accuracy of identification by repeatedly learning the images shot at the same place.



Figure 1. Screen image of identifying bird species using <AI Bird>

In the system of <AI Bird>, we are using the result of “automatic detection of wild birds by image recognition using AI deep learning” which studies by The University of Tokyo (Research Center for Advanced Science and Technology and Graduate School of Information and Science and Technology).



Figure 2. Field experiment in Hokkaido

■Background of system development

As wind power generation becomes more widespread, efforts are needed to prevent bird strikes in which wild birds collide with wind power generator blades. Until now, quantitative surveys of rare birds have been conducted by visual identification. Since this method is directly observed by humans, there are problems such as difficulty in continuous observation for a long period of time. It is expected that the introduction of wind power generation will increase further in the future, and the need for technological development that efficiently and quantitatively comprehends rare birds will increase.

■Future outlook

By promoting the use of the <AI Bird> at the site of surveys during planning and bird strike monitoring during operation of wind power generation projects, it is expected to improve the reliability of understanding the habitat of rare birds. We believe that the full-scale operation of <AI Bird> will contribute to the coexistence of wild birds and the wind power generation business.

To improve accuracy and reliability, the data will be accumulated by <AI Bird> observation. We will proceed with commercialization by 2023.



■ Roles and Responsibilities

Supervision : Japan Weather Association (SHIMADA Yasuo , Project Leader)
Technical Supervise : Research Center for Advanced Science and Technology (RCAST), The University of Tokyo (IIDA Makoto, Project Associate Professor)
Graduate School of Information Science and Technology, The University of Tokyo (NAEMURA Takechi, Professor / KAWAKAMI Rei, Project Associate Professor / YOSHIHASHI Ryota)
System Implementation : LEADEDGE TECHNOLOGY Corporation (KATAYAMA Atsushi, CEO & Co-Founder)

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