

# Speaker Bio



**Sheng-Feng Shen** is a Research Fellow at the Biodiversity Research Center, Academia Sinica (Taipei), where he leads integrative research at the interface of behavioral and evolutionary ecology, biogeography, and climate-change biology. He earned his Ph.D. in Animal Behavior from Cornell University (2009) and conducted postdoctoral work at Cornell and the University of Cambridge. Shen's group combines theory, field and laboratory experiments, comparative analyses, and machine learning to ask how environmental variability, social interactions, and constraints shape evolutionary trajectories—from individual behavior to species ranges. He pioneered the use of deep learning in macro-ecology with a 2019 Nature Communications study that analyzed >20,000 images across ~2,000 Taiwanese moth species, revealing robust environment-linked patterns in color diversity and opening new avenues for quantifying morphological responses to ecological gradients. His recent publications span Nature (climate velocities and species tracking in mountains, 2024), Annual Review of Ecology, Evolution, and Systematics (range limits along elevational gradients, 2024), Ecology Letters, Proceedings of the Royal Society B, and Ecological Monographs. Shen's contributions have been recognized with the Academia Sinica Research Award for Junior Research Investigators (2014), Taiwan's Ta-You Wu Memorial Award (2017), the Young Scholars' Creativity Award (2019), and the Outstanding Research Award (2021). He also serves the community as Associate Editor for Proceedings of the Royal Society B (2023–) and on editorial boards including Ethology and Zoological Studies. In this lecture, Shen will illustrate how modern AI helps disentangle the interplay between randomness, directionality, and constraint in evolution—and what this means for predicting biodiversity in a rapidly changing world.