



ECOLOGY and EVOLUTIONARY BIOLOGY

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“Data Science for Ecology and Conservation”

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Computation has fundamentally changed the way we study nature. New data collection technology, such as GPS, high definition cameras, UAVs, genotyping, and crowdsourcing, are generating data about wild populations that are orders of magnitude richer than any previously collected. Unfortunately, in this domain as in many others, our ability to analyze data lags substantially behind our ability to collect it. In this talk I will show how computational and data science approaches can be part of every stage of the scientific process of understanding wild animals in the context of their natural environments, from intelligent data collection (crowdsourcing photographs and identifying individual animals from photographs by stripes and spots - Wildbook.org) to hypothesis formulation (by designing a novel computational framework for analysis of dynamic social networks), and provide scientific insight into collective behavior of zebras, baboons, and other social animals. I will also show how this work can have an impact on biodiversity conservation, affecting policy and changing species conservation status, as well as engaging people around the globe to combat wildlife extinction.



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