Automating biodiversity monitoring using soundscapes

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Human pressures are causing ecosystems around the world to change at an increasing rate. Accurate and large scale monitoring of these changes is necessary, yet traditional survey techniques are often taxonomically focussed, laborious, or scale poorly. In this talk we will explore how AI-driven analyses of ecosystem soundscapes can provide a route to fully automating biodiversity monitoring. We will demonstrate how CNN-derived feature embeddings allow us to track and predict spatial and temporal patterns in species communities across biomes. This approach will be built on to demonstrate how acoustic monitoring can allow us to predict species occurrences in tropical forests, even where the species are silent. We will finally explore the generalisability (or lack thereof) of soundscape monitoring, and what the key challenges for the field going forward are.

the CI AI talk series

Venue: Online*
Time: 5 PM IST
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About the Speaker

Dr Sarab Sethi leads an interdisciplinary research group at Imperial College London, exploring topics spanning applied maths, engineering, and ecology. His work focuses on acoustic monitoring of natural environments, developing novel real-time sensing devices (https://www.bugg.xyz) and AI to extract ecological insight at scale from audio data. Dr. Sethi has led the deployment of cutting-edge biodiversity monitoring networks in Borneo's tropical forests (http://acoustics.safeproject.net) as well as across the entire span of Norway (https://thesoundofnorway.com). Applications of his work include conservation, agricultural pest control, supply chain transparency, scientific enquiry, and more.

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