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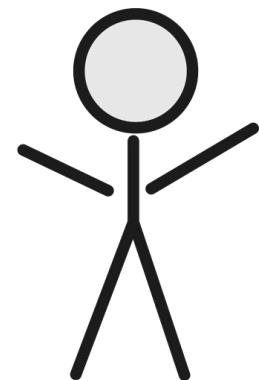
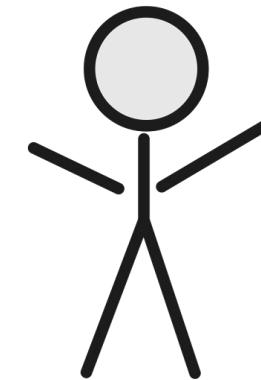
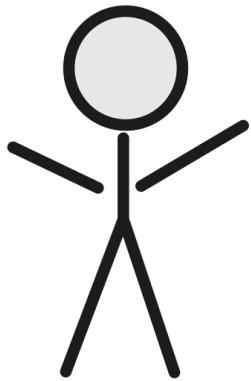
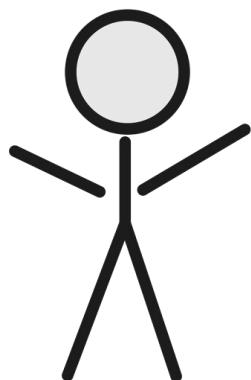
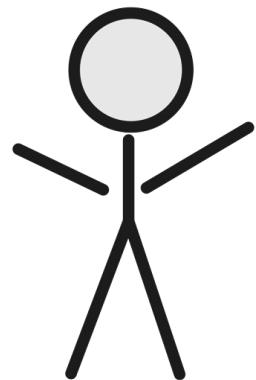
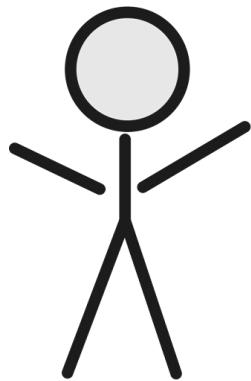
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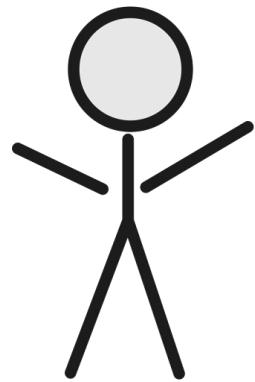
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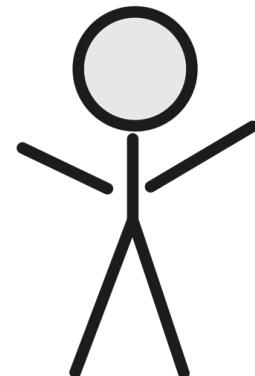
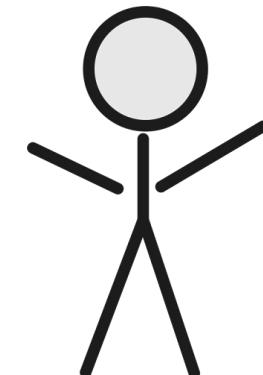
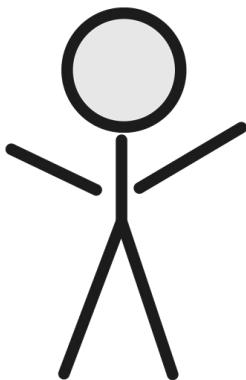
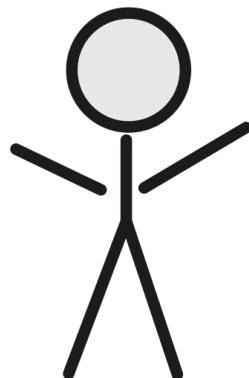
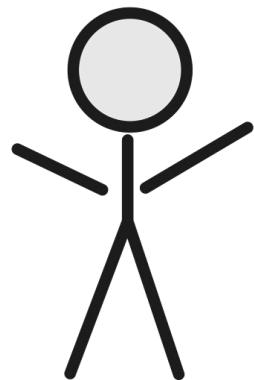
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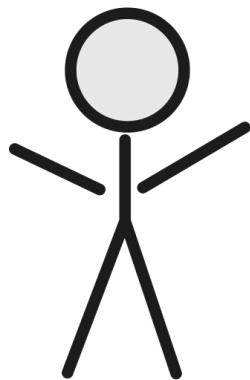
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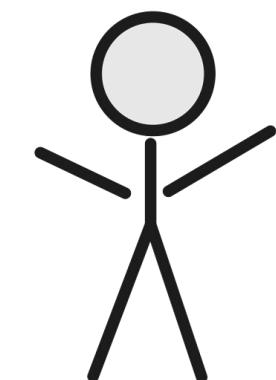
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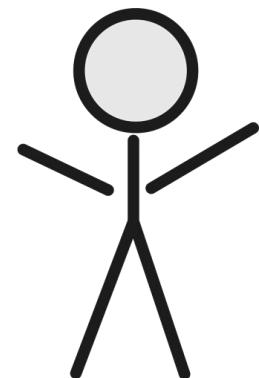
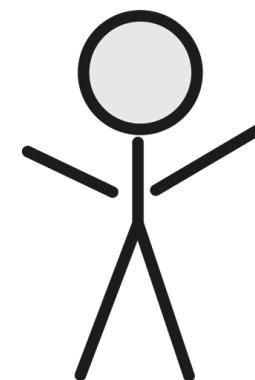
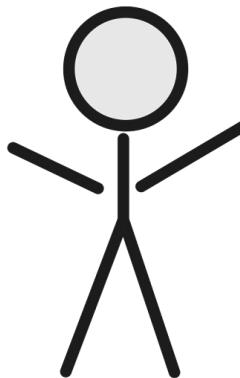
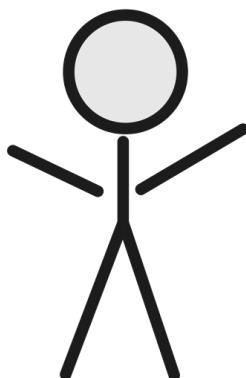
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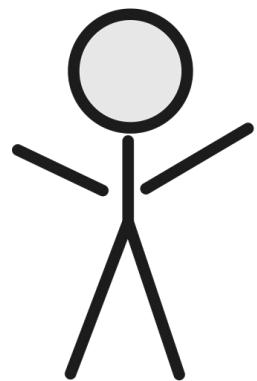
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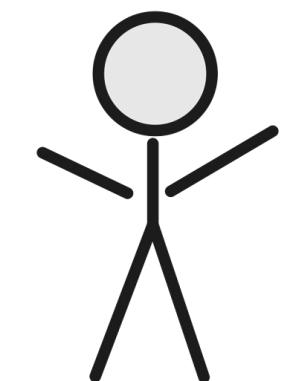
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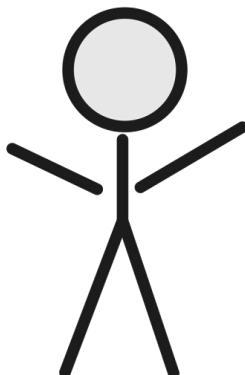
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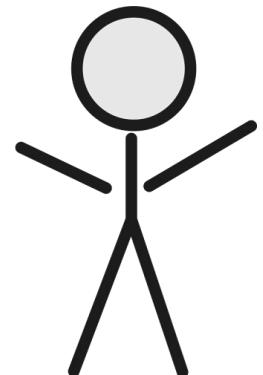
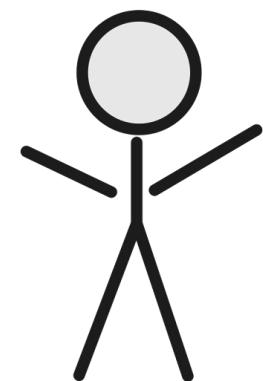
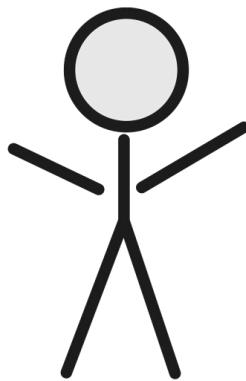
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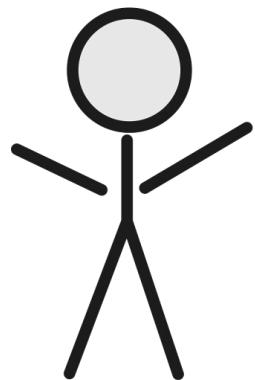
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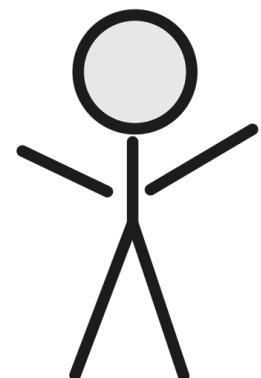
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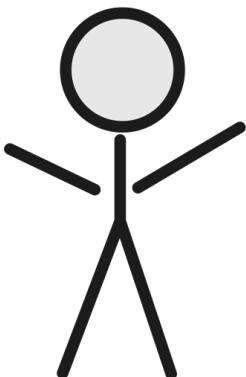
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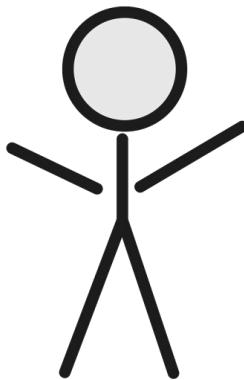
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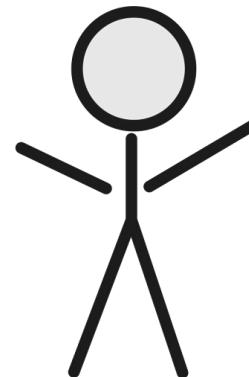
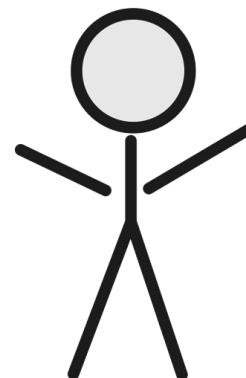
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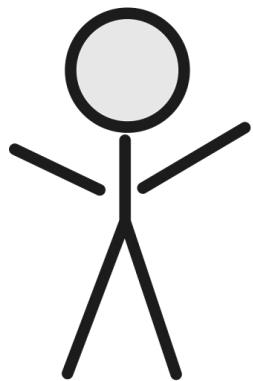
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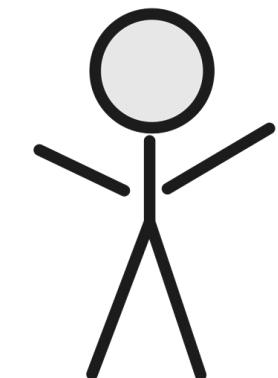
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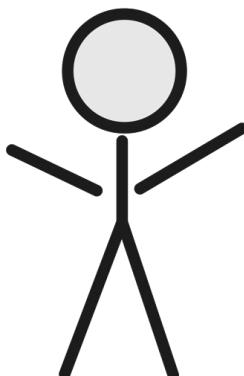
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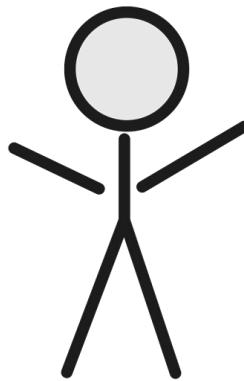
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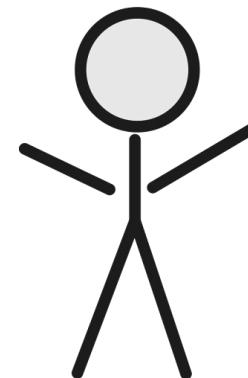
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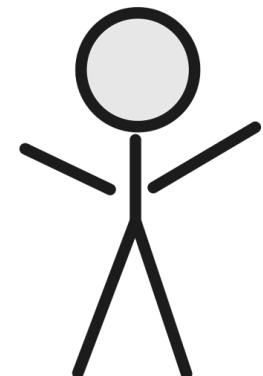
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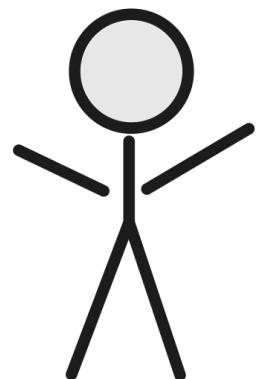
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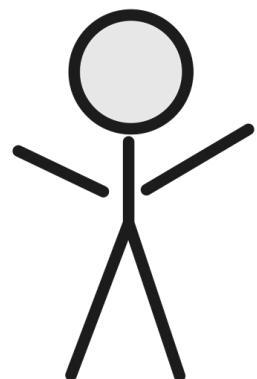
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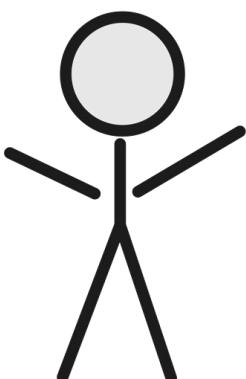
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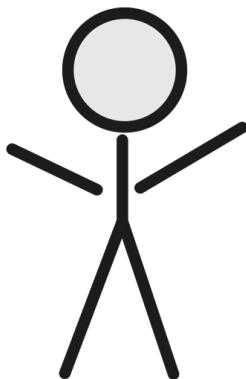
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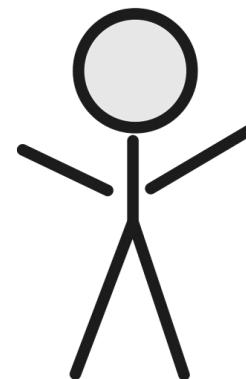
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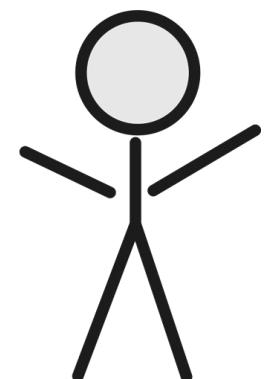
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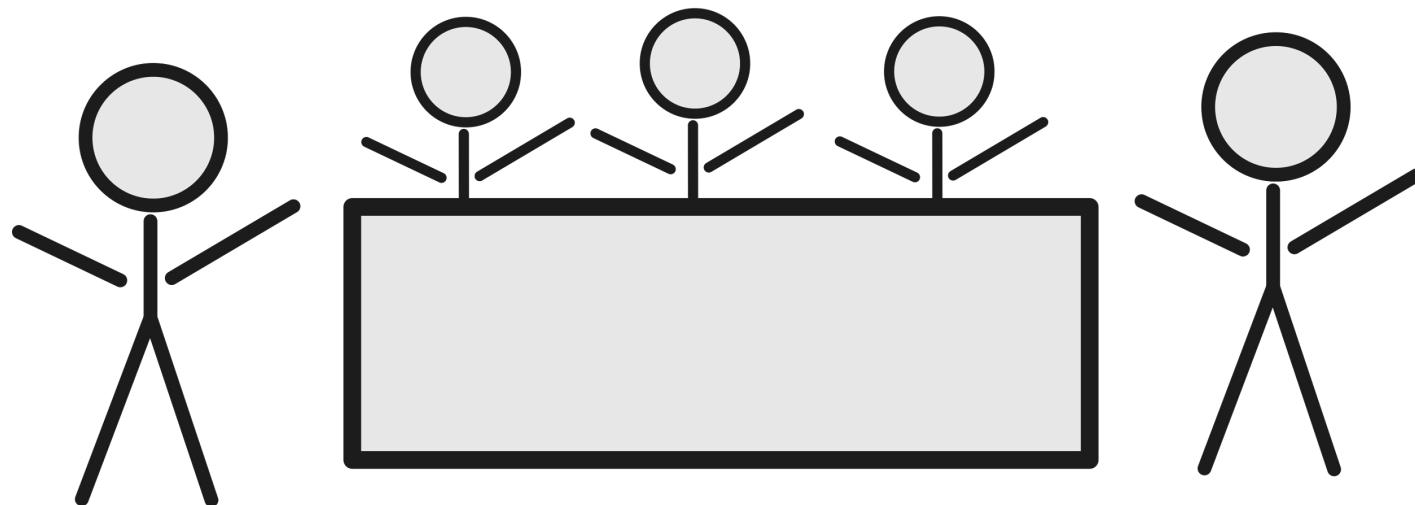


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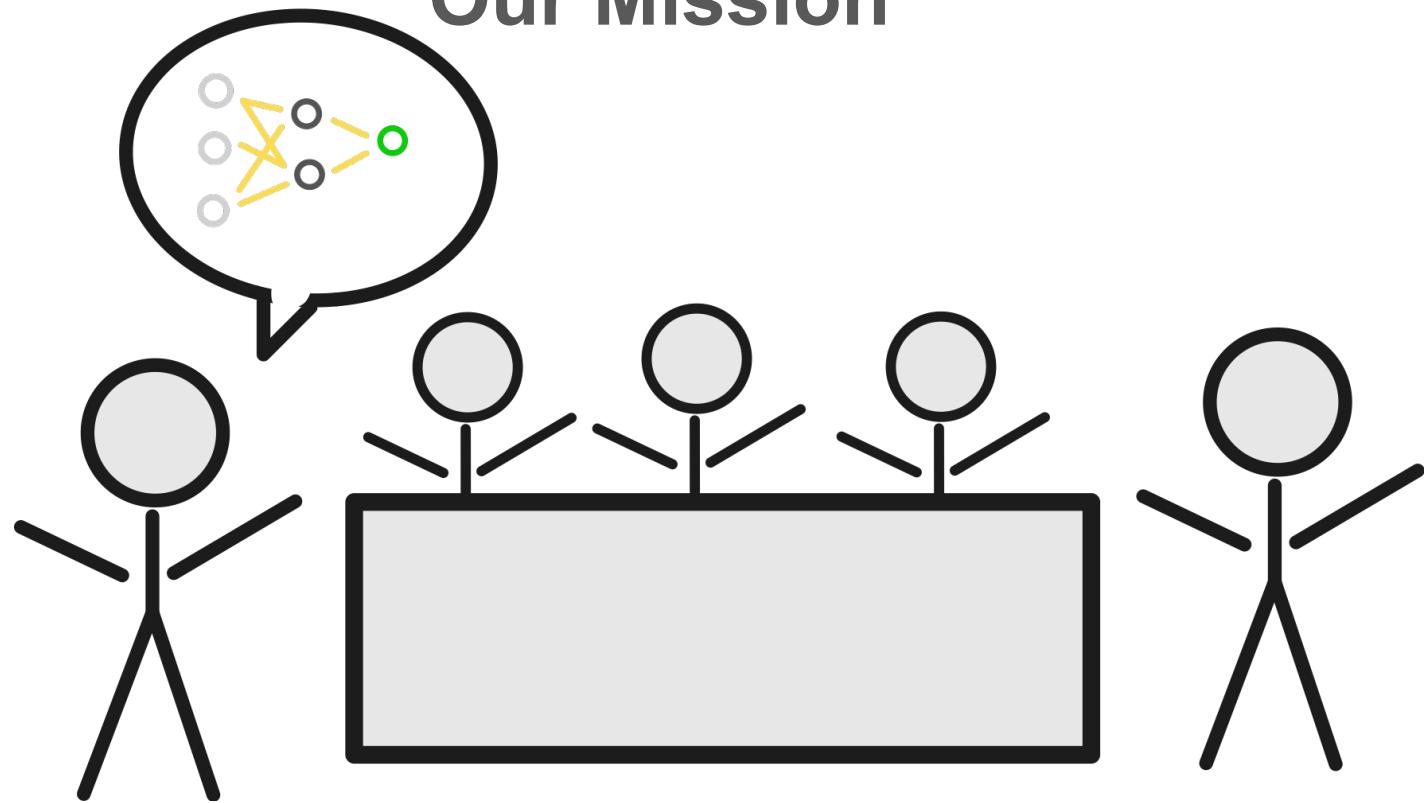


Yuri

Our Mission



Our Mission



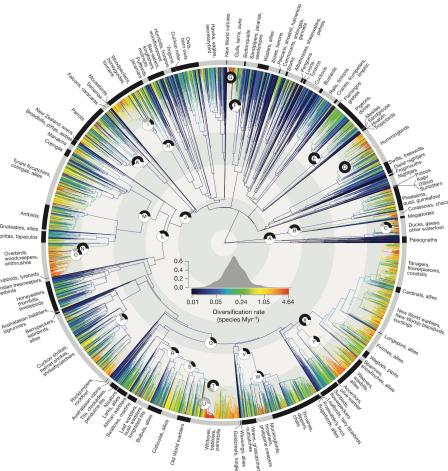
Our Mission



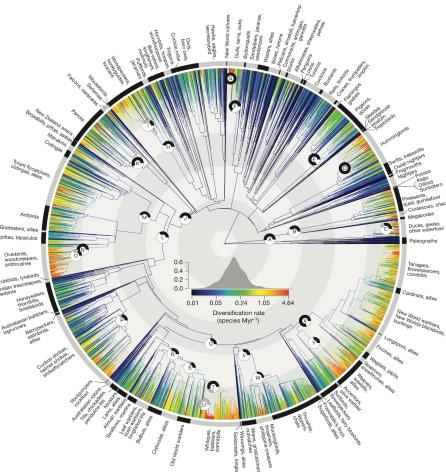
Why
Bioacoustics?

When you think about how to
measure biodiversity...

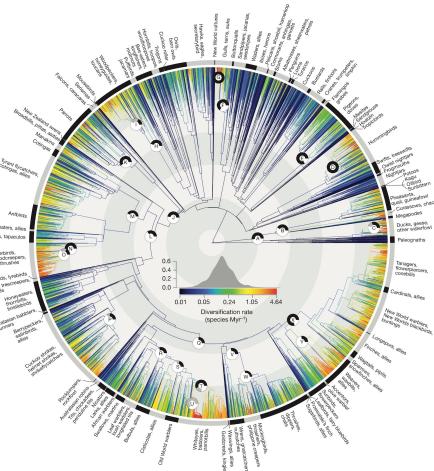
When you think about how to measure biodiversity...



When you think about how to measure biodiversity...

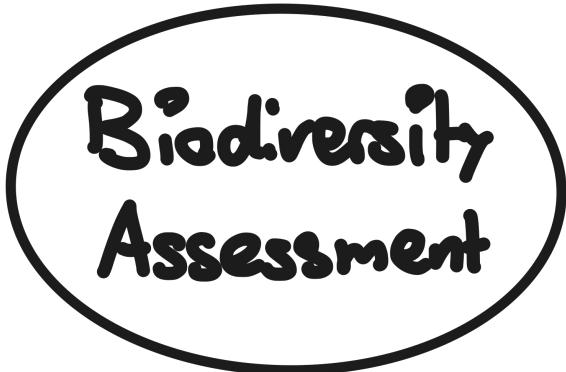


When you think about how to measure biodiversity...



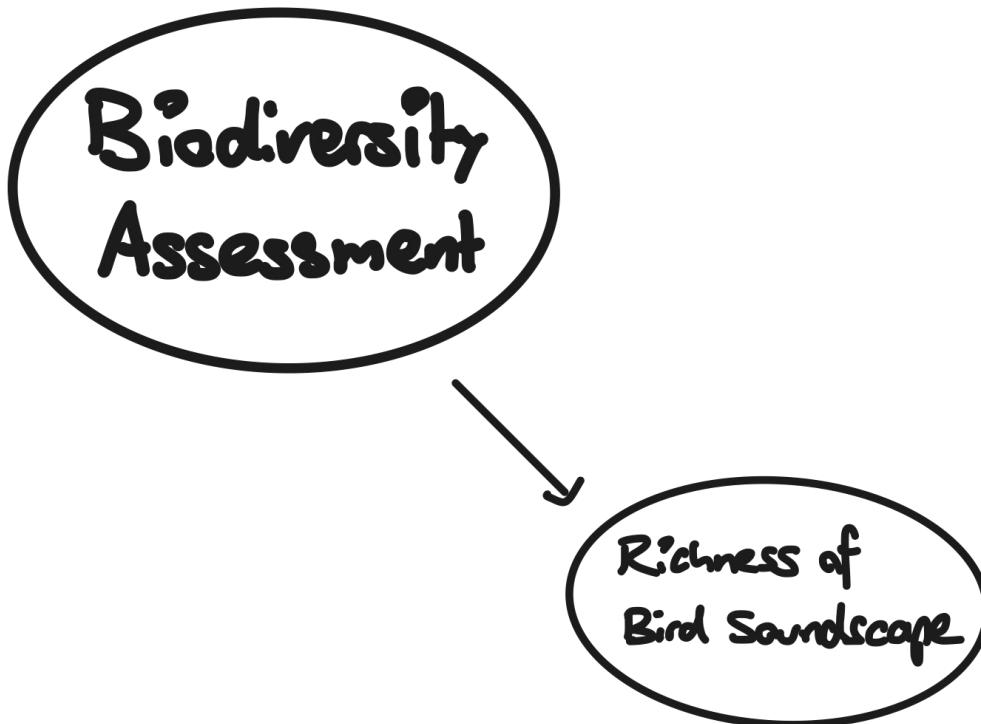
*In Rainforests, the richness of bird species is
a very good indicator of its overall health and
present biodiversity*

Our Task

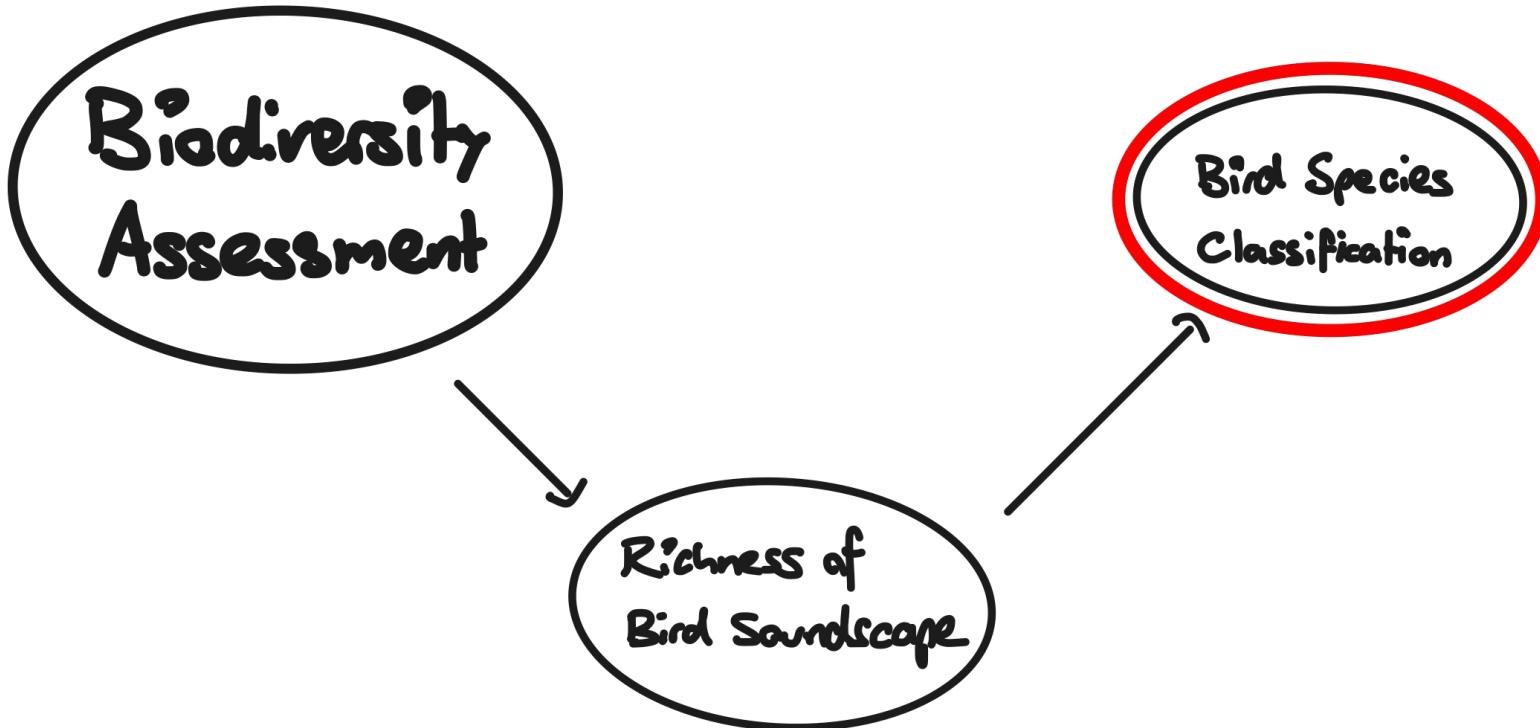


Biodiversity
Assessment

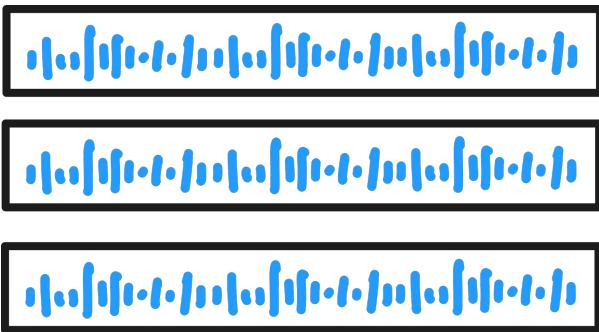
Our Task



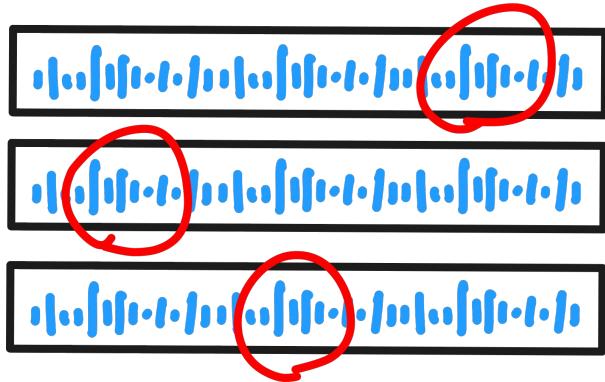
Our Task



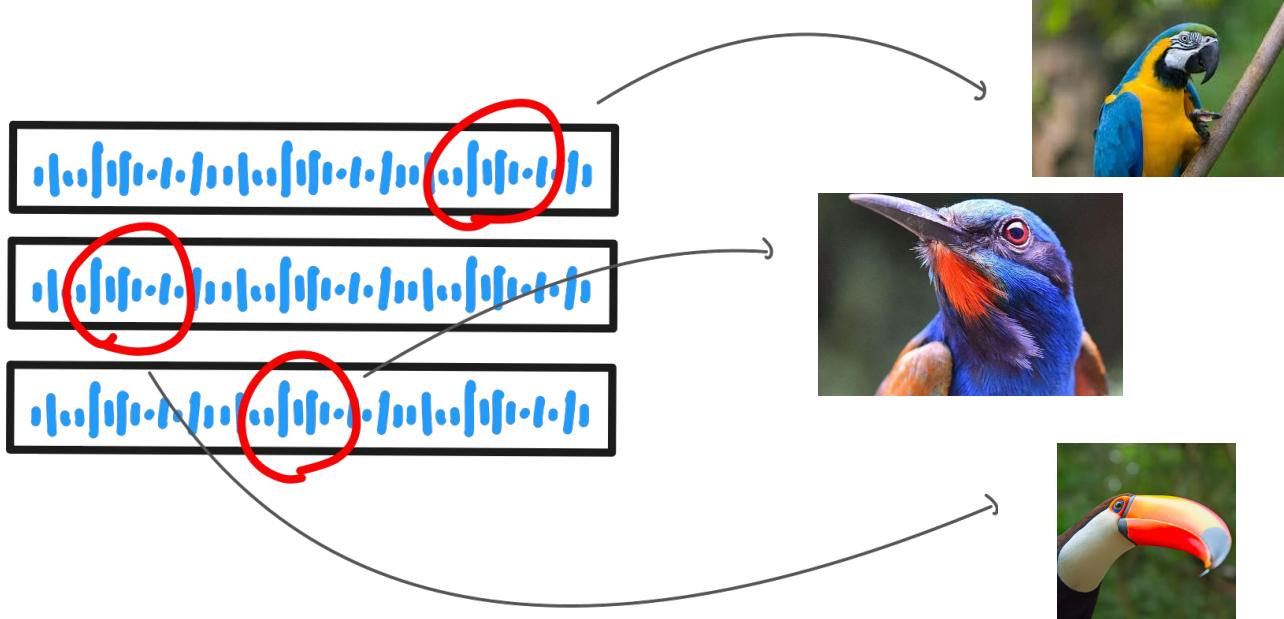
Our Task: Bird Song Classification



Our Task: Bird Song Classification

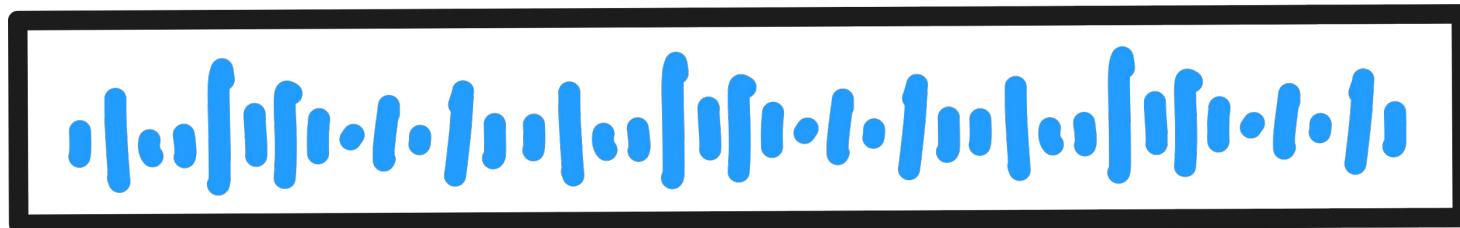


Our Task: Bird Song Classification

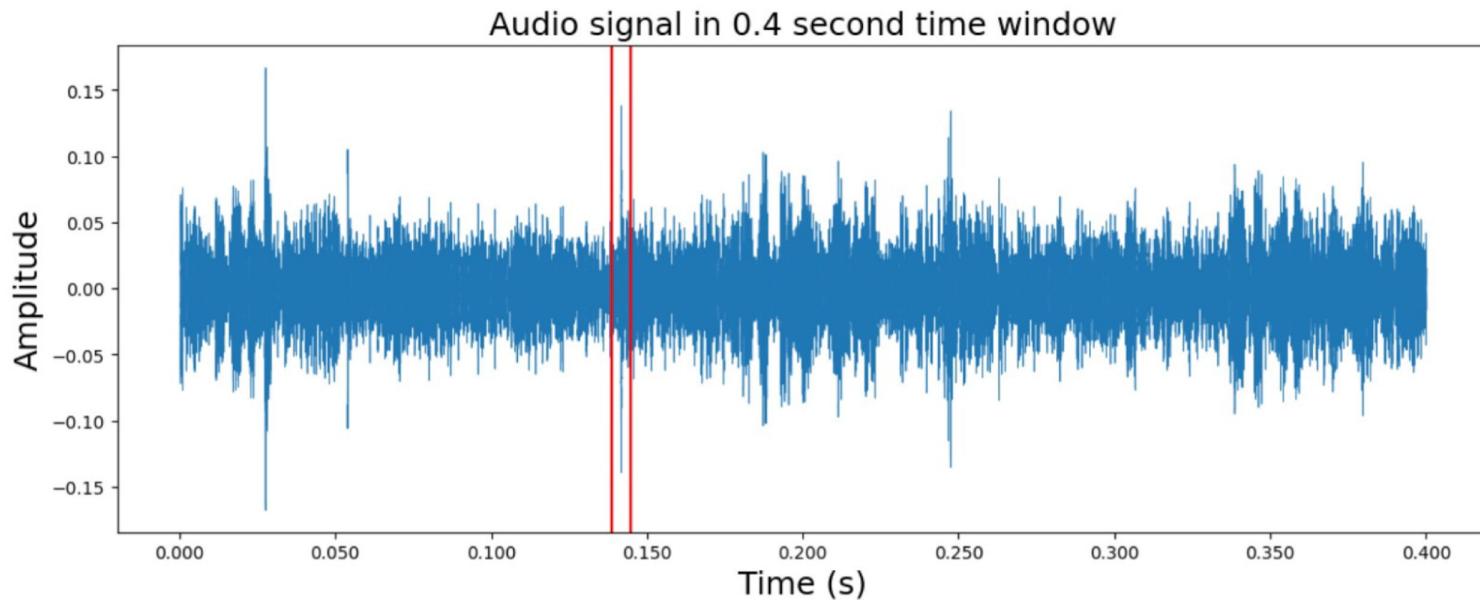


Our Approach(es)

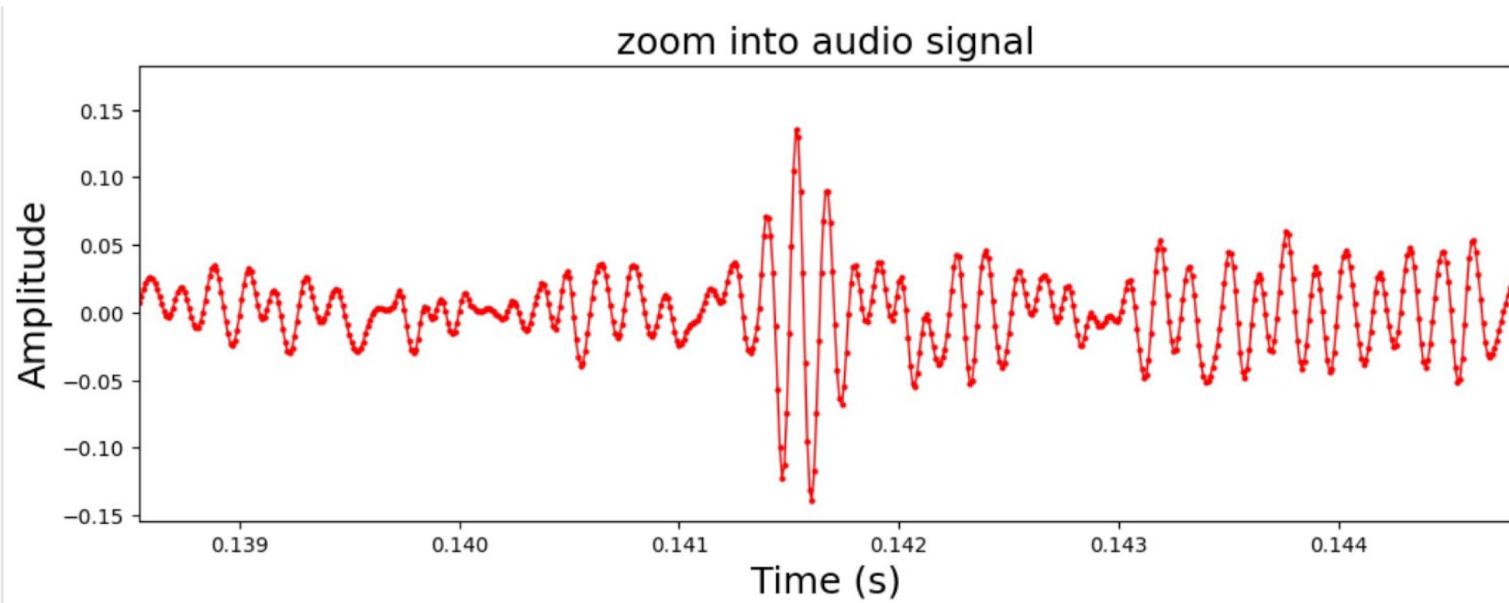
Our Approach: Pre-Processing



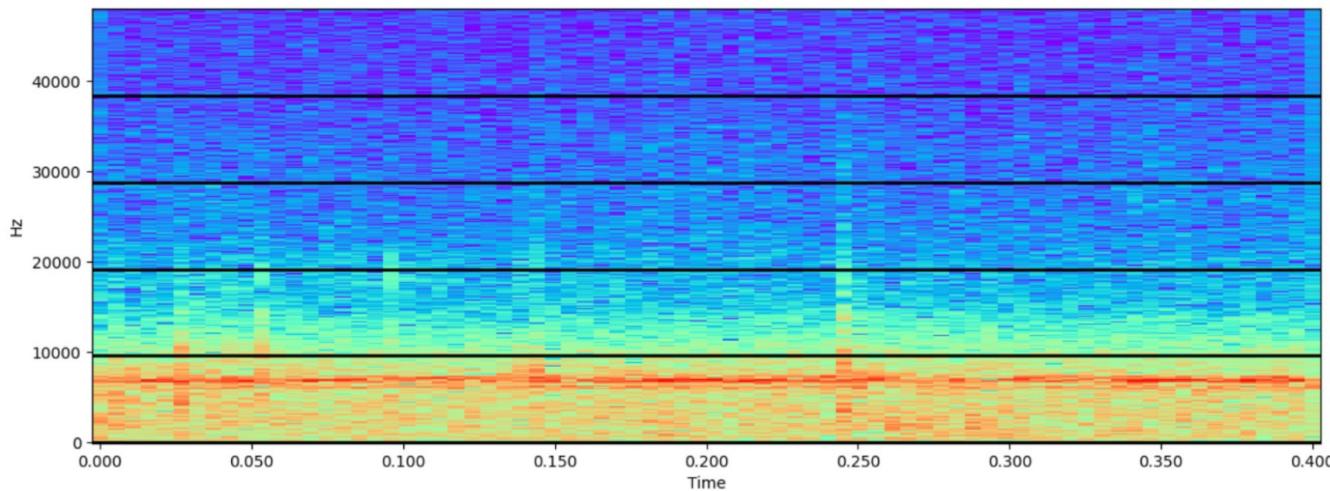
Our Approach: Pre-Processing



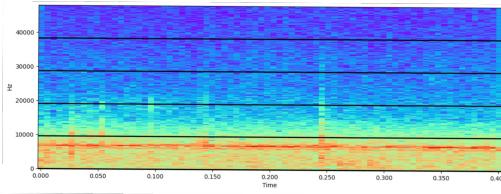
Pre-Processing: A closer look



Pre-Processing: The Spectrogram

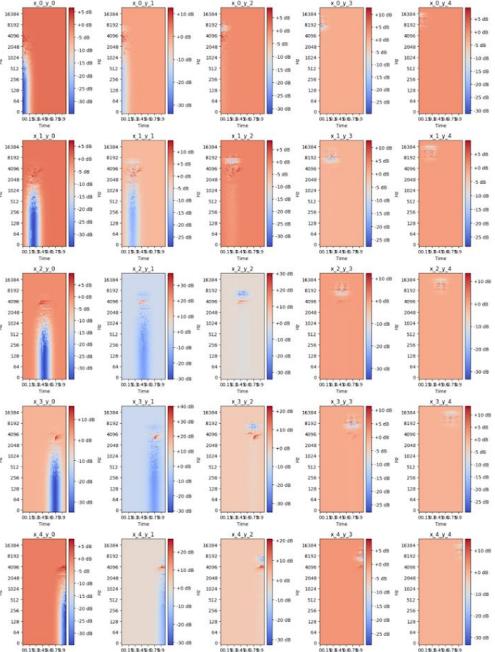
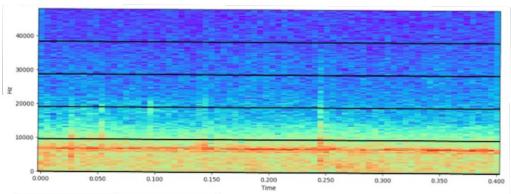
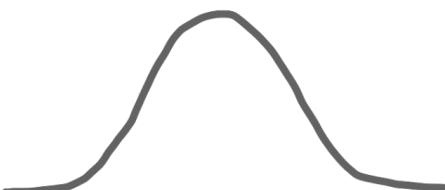


Pre-Processing: Gaussian Filtering

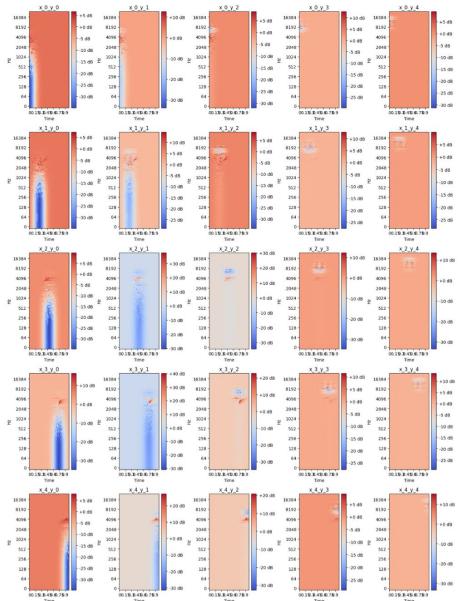


Pre-Processing: Gaussian Filtering

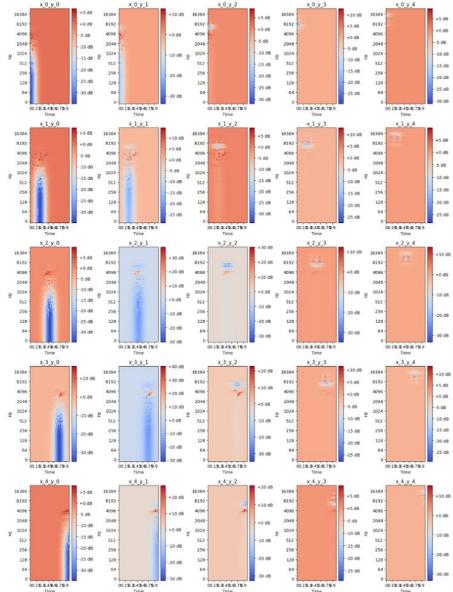
Multiple times



Pre-Processing: Convolutions & Pooling

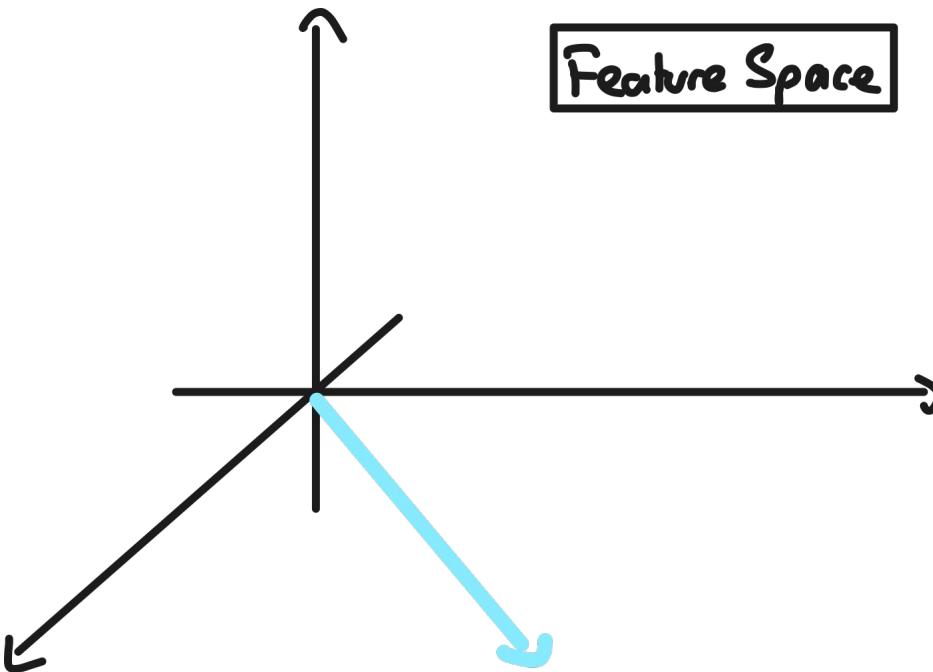


Pre-Processing: Convolutions & Pooling

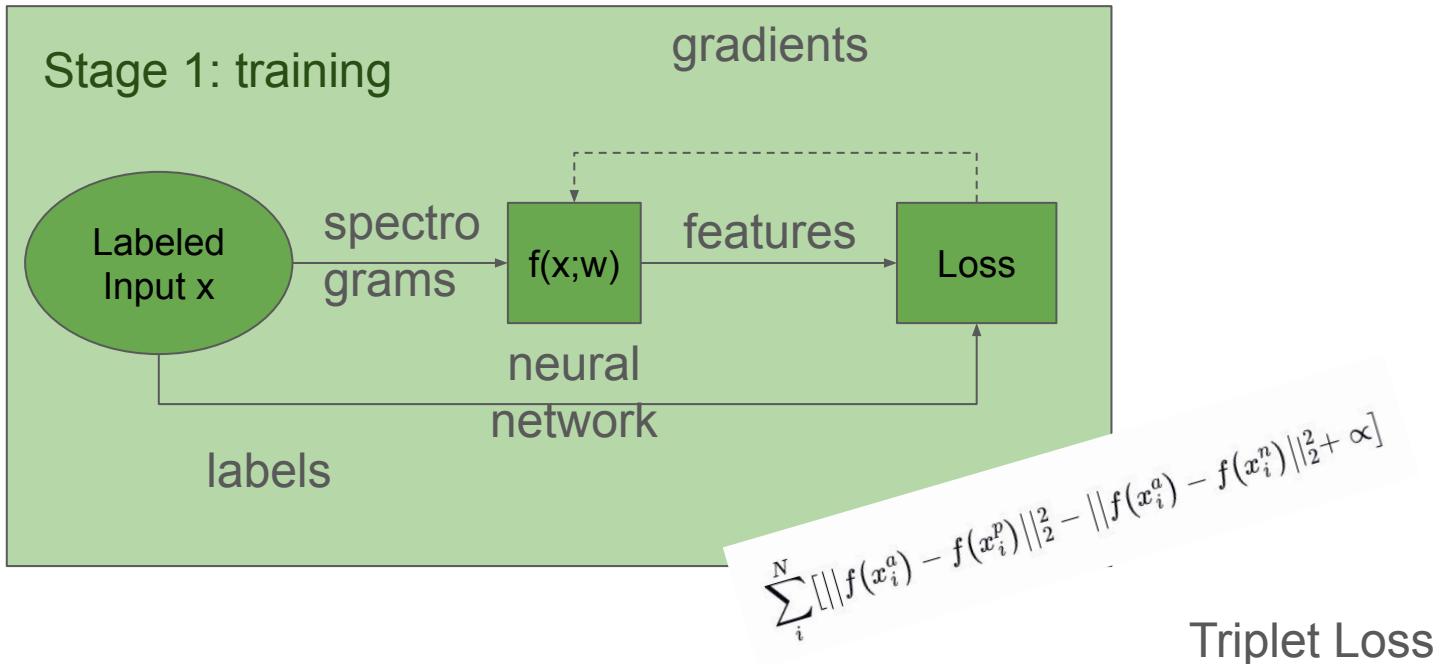


AvgPool

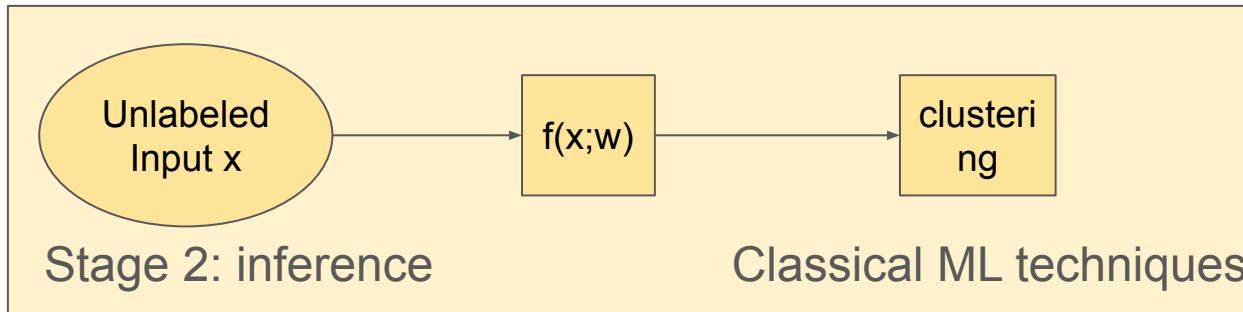
Pre-Processing: The Feature Vector



Approach 1: Classification

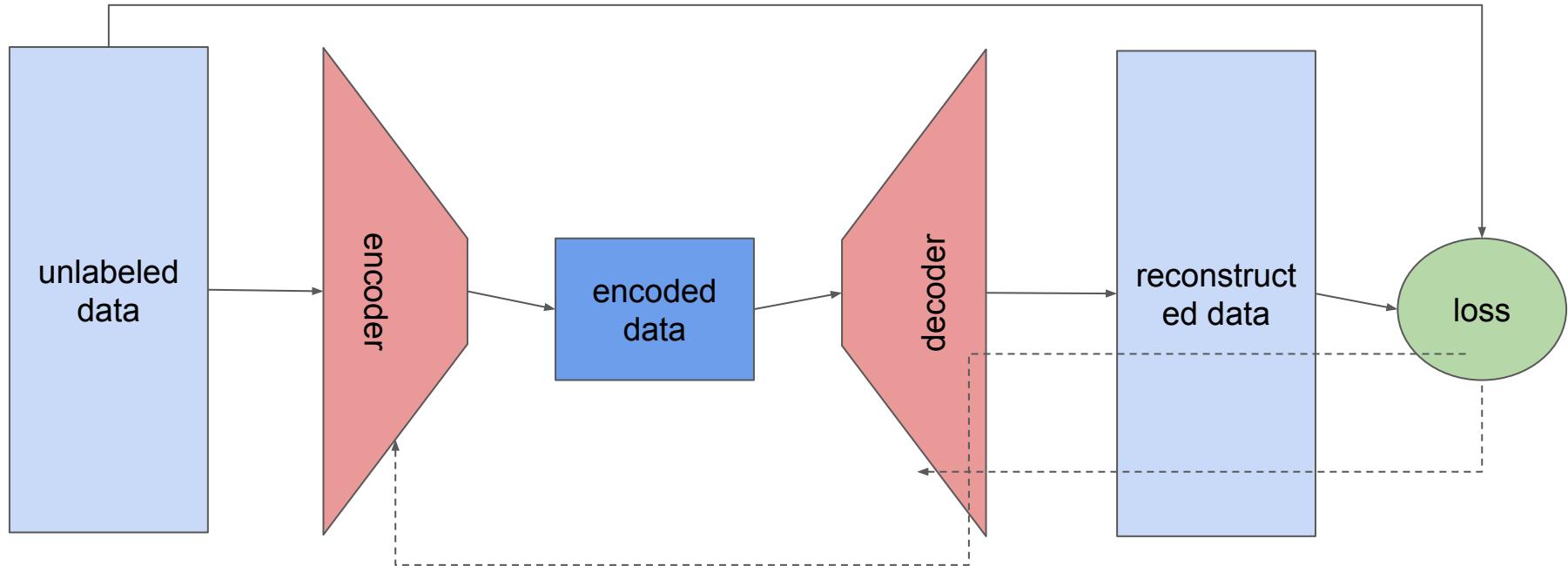


Approach 1: Classification



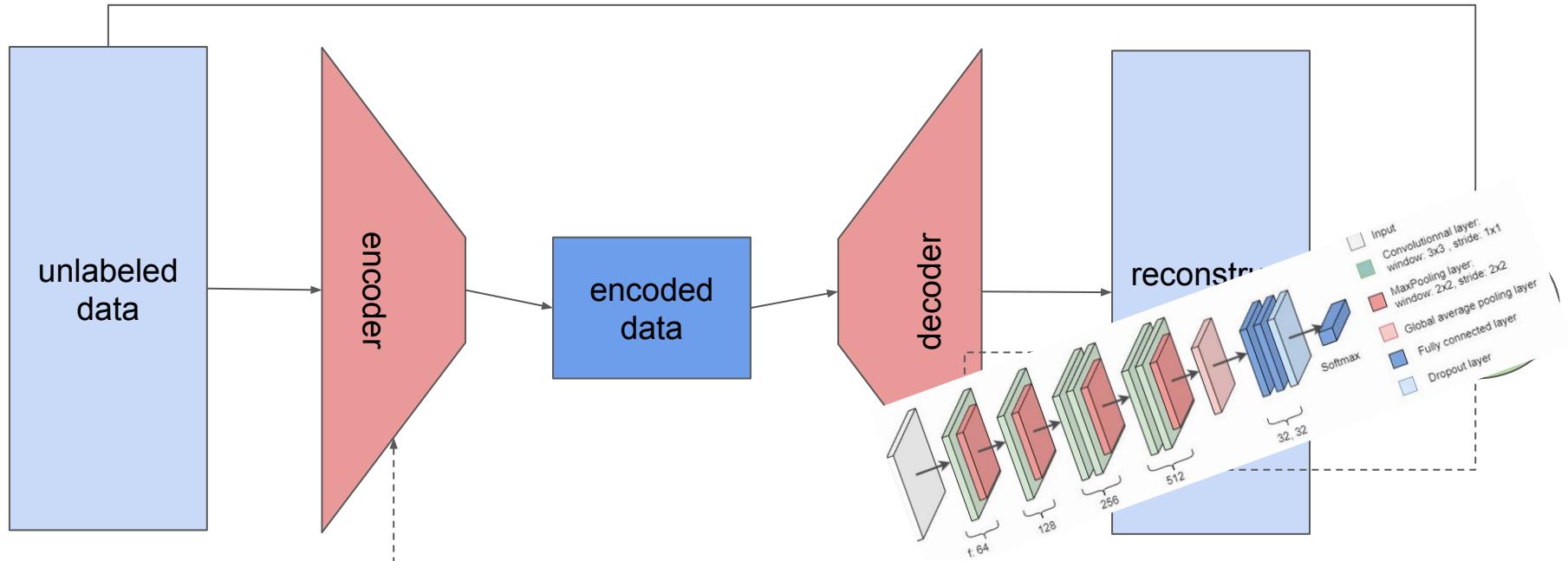
Approach 2: Encoder-Decoder

Stage 1 : training



Approach 2: Encoder-Decoder

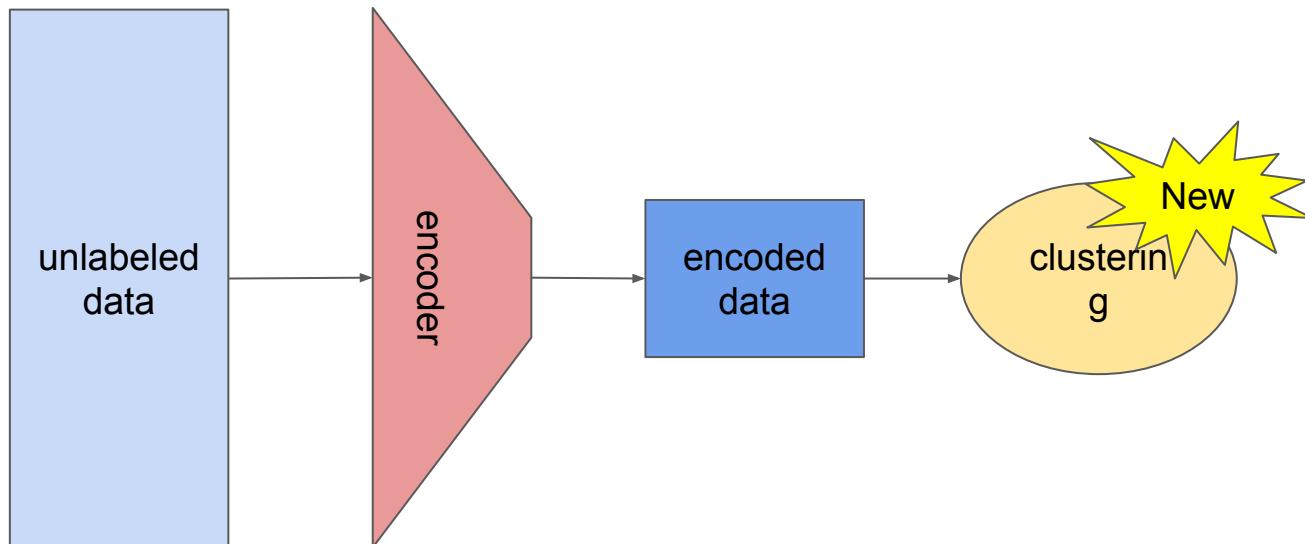
Stage 1 : training



VGGish Architecture

Approach 2: Encoder-Decoder

Stage 2 : clustering



Our Limitations

- Lots of data
- Limited Compute to train our models / extract features

Future Aims

- Use labels to fine-tune a bigger model
- Use all of our unsupervised data for the encoder-decoder network

Thanks
for the Attention !