










Plant ID

Full Stack Deep Learning




Spaces:  for876543 / **plant-id-3**   like 0 • Building

 App › Files and versions  Community

 inp  




Clear Submit

5:34   

Unbeleafable ID

Resend Clear All



Our Predictions:

<u>Plant Name</u>	<u>Confidence</u>
Calochortus splendens	0.988
Lygodesmia texana	0.011
Calochortus argillosus	0.000

Tell me more about these species:

Calochortus splendens

Lygodesmia texana

Calochortus argillosus

None of these predictions are correct

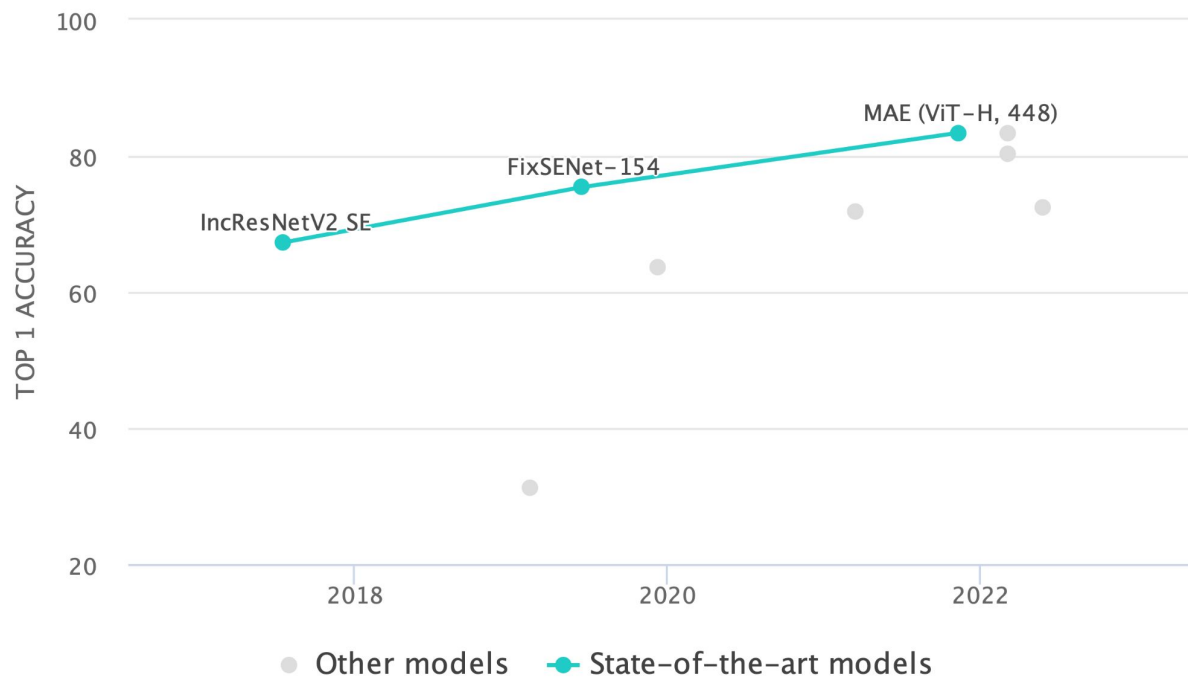
<> Intro Unbeleafable ID Plant.id

Plant ID: a classic problem



Plant ID: a hard problem

iNaturalist 2017 Benchmark



Our approach




iNaturalist

+



Our dataset

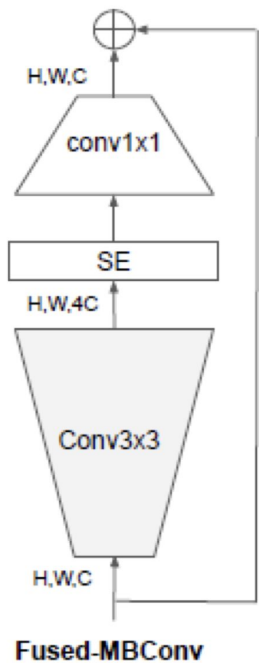


**iNaturalist
Dataset
2021**

10,000 Species
2.7M Images

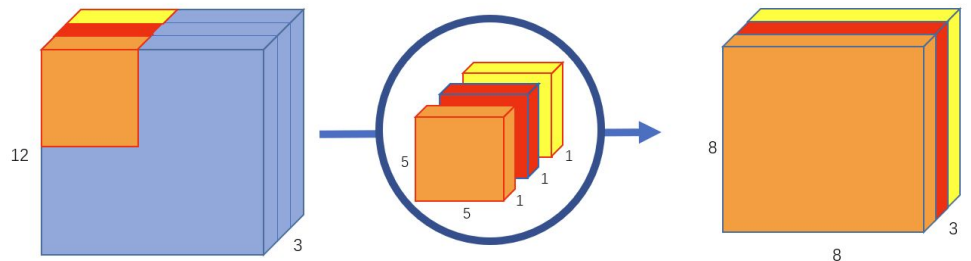
FGVC8 iNaturalist

Model design

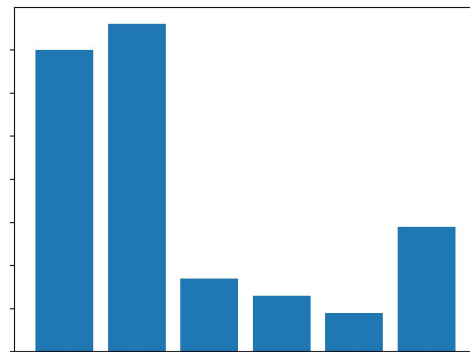


EfficientNetv2

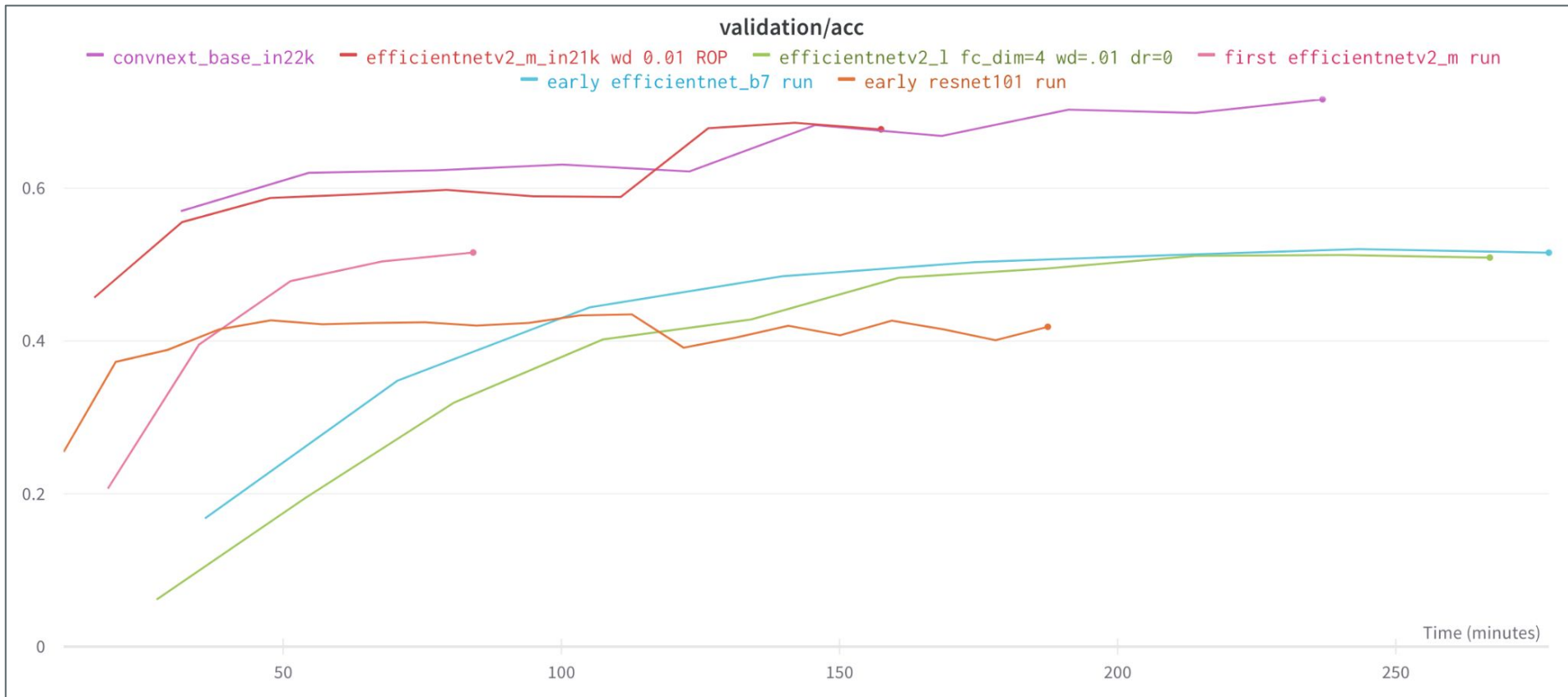
Custom DWSCov head



Logits



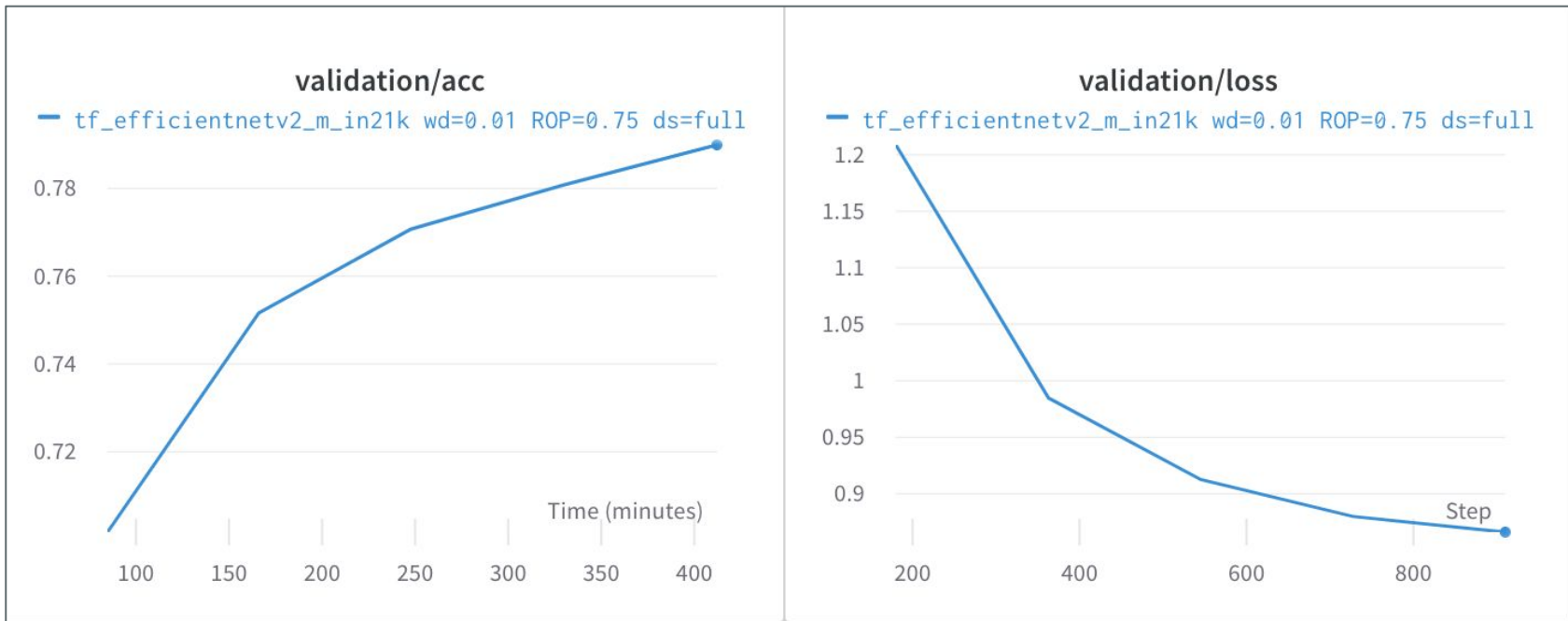
Early experiments



A huge mistake

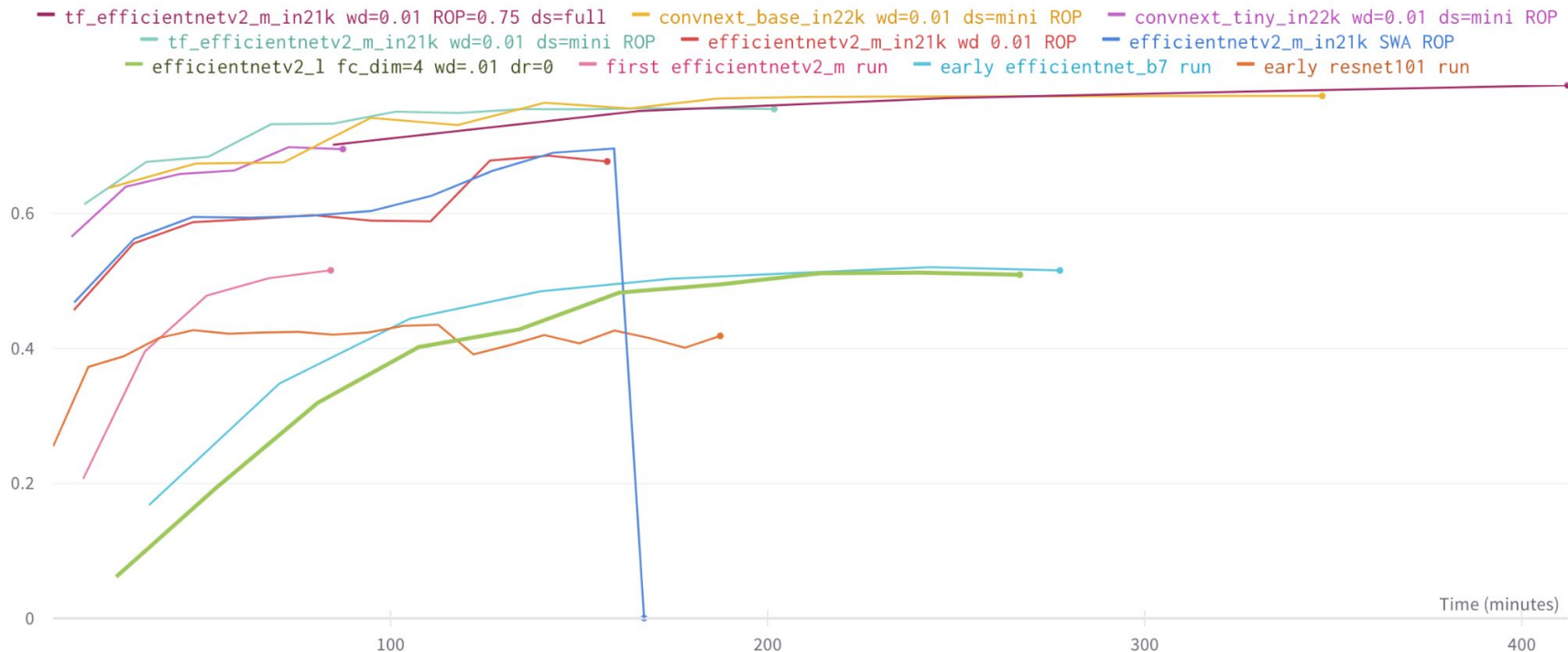


A successful run

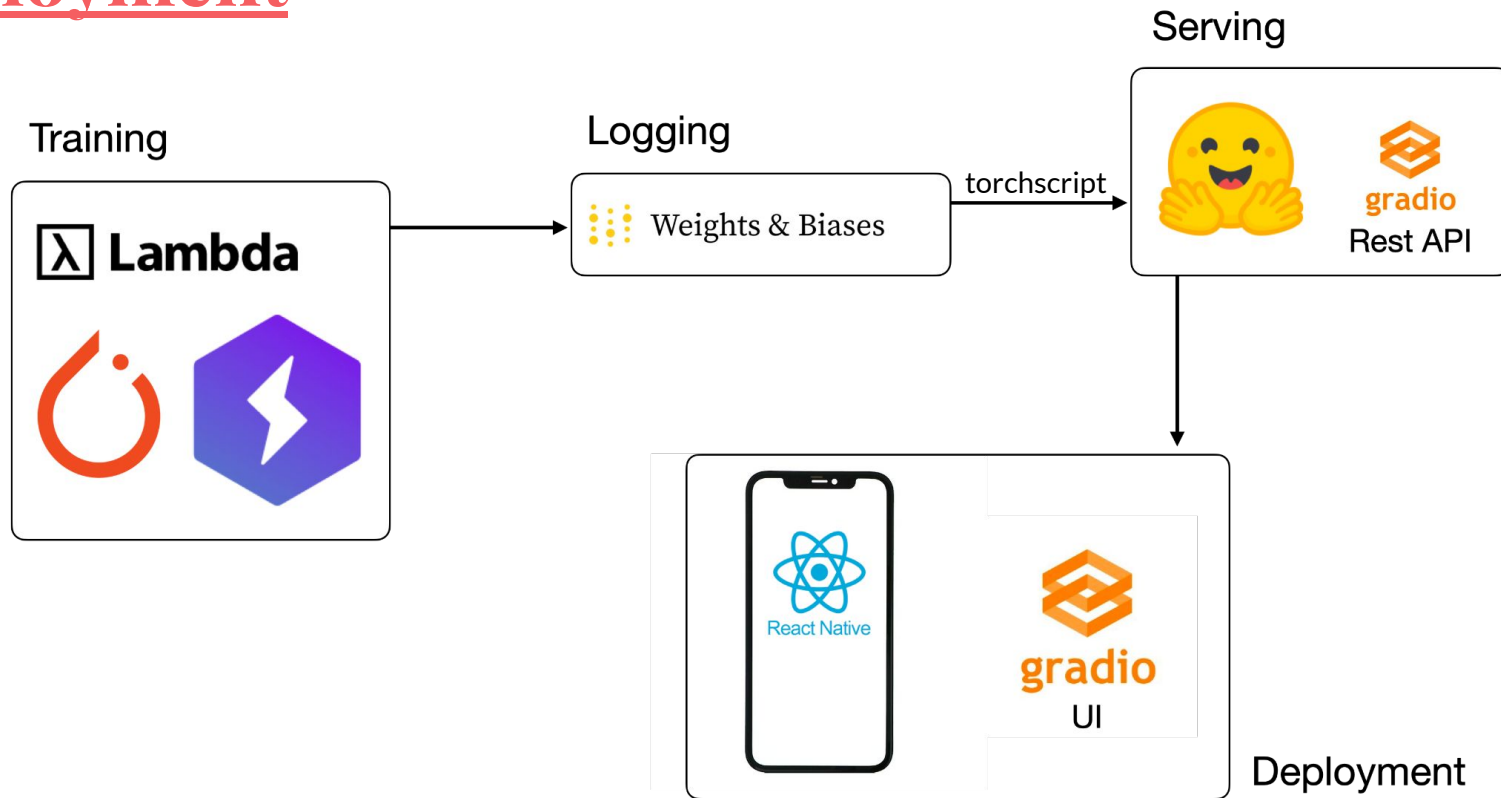


Experimentation: details




validation/acc







Deployment



Gradio demo

Spaces:  for876543 / **plant-id-3**   like 0 • Building

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Clear Submit

output 

Bryum argenteum

Bryum argenteum	100%
Selaginella kraussiana	0%
Leucolepis acanthoneura	0%

Gradio demo

Spaces: [for876543/plant-id-3](#) like 0 Running

App Files and versions Community



Clear




Submit




output

Euphorbia myrsinites

Euphorbia myrsinites	55%
Rhodiola rosea	33%
Sedum obtusatum	9%

Gradio demo

Spaces:  for876543 / **plant-id-3**   like 0  Running

 App  Files and versions  Community

Echeveria elegans



Clear

Submit

output

Euphorbia myrsinites

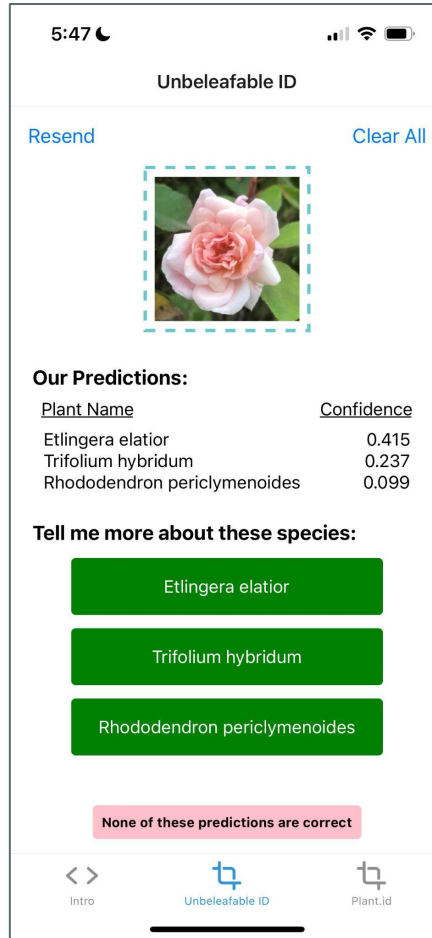


55%

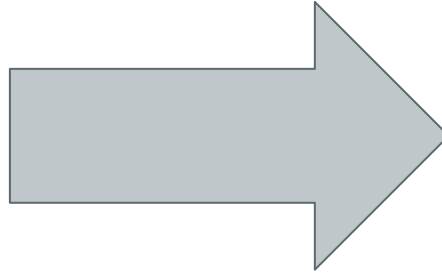
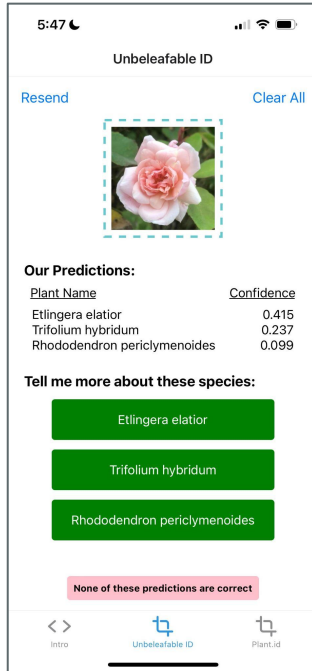
33%

9%

Mobile app



Mobile app: annotation flow



Future directions

- Better model
 - Geodata
 - ViTs

- Better MLOps
 - Automatic deployment
 - Retrain on user-annotated data
 - Validation layers

Future directions

- Better app
 - Native development
 - Use camera video stream

- Distillation for on-device inference

Thanks!