

# Lizard Class Comp. Advisor Bi-weekly Meeting Feb 6

## 1 Meeting Details:

- **Date:** February 6, 2025
  - **Duration:** 44m 26s
  - **Attendees:** Chia Wen Han, Jahanshahi Ilia [COM S]
- 

## 2 Key Discussion Points:

### 3 1. Progress Update on Lizard Classification

- **Dataset Preparation & Annotation:**
  - Registered for **Pace Exense** (a cloud cluster).
  - Explored **auto-labeling** using a foundation model.
  - **Annotated and reviewed a subset** of the dataset (~2000 images).
  - **Challenges with auto-labeling:**
    - Works well in clear images but fails in **occluded, poorly lit, or small object cases**.
    - Struggles with **camouflage and background blending**.
- **Annotation Strategy:**
  - Used **bounding boxes** and **manual review** to refine labels.
  - Approved **962 images** in one session.
  - Plans to **annotate 2000 images per class (total 10,000 images)**.
  - Dataset split: **60% training, 20% validation, 20% testing**.

### 4 2. Model Training Plan

- **Two-step approach:**
  1. **Object Detection (YOLOv8):**
    - Detect lizards **without classifying species**.
    - Train YOLOv8 to **identify lizards and generate bounding boxes**.
  2. **Classification Model:**

- Crops detected lizards, enlarges, and **passes them to a classification model**.
- Aims to address **small object detection issues** by improving visibility.
- **Performance Metric:**
  - Evaluating **Mean Average Precision (mAP)** at **IoU 50%**.

### **5 3. Next Steps (One-Week Plan)**

- **Annotate 10,000 images** (2000 per class).
- **Familiarize with Pace cluster** and test running a script.
- **Prepare for fine-tuning YOLOv8** in the next phase.