BatLab User Manual

Overview

BatLab is a web-based application designed to support bat acoustic research. It allows researchers to upload and classify .wav audio files, register acoustic detector units, register bat species, submit labelled training data for model improvement and submit new model training runs.

Logging In

1. Open the BatLab application in your browser.
2. Enter your **Username** and **Password** (Default credentials: Username: admin / Password: password).
3. Click **Login**.

Once logged in, you will see the main application with five tabs across the top: **Classify, Add Detector, Add Species, Add Training Data,** and **Train New Model.**

Tab 1: Classify

This tab is where you classify bat audio recordings. Follow the two-step process below.

Step 1 — Enter the Source Folder Path

1. Type the full path to the folder containing your .wav files into the **Source folder path** field.
    - Mac/Linux example: /Users/you/BatRecordings
    - Windows example: C:\BatRecordings
2. Click **Verify Path & Load Files**.
3. If the path is valid and .wav files are found, a confirmation message will appear showing how many files were detected.

Step 2 — Classify

1. Click the **Classify** button.
2. The app will process all detected .wav files. A spinner will appear while analysis runs.
3. Once complete, results appear in two tables:

Identified Species Table Shows files where the model's confidence met the threshold. Displays the filename, predicted species, and confidence level.

Unknown Species Table Shows files where confidence was too low to make a reliable prediction.

Moving Files to Folders

After classification, you can organize files directly from the app.

For identified files:

1. Click **Create New Folder for Identified Sound Files**.
2. Enter a destination folder path.
3. Click **Create Folder & Move Files**. Files will be moved into species-named subfolders inside your chosen destination.

For unknown files:

1. Click **Create New Folder for Unknown Sound Files**.
2. Enter a destination folder path.
3. Click **Create Folder & Move Files**. All unknown files will be moved into that folder.

> **Note:** Files are **moved**, not copied. The source folder must be different from the destination.

Starting a New Session

If results are already displayed and you want to start fresh, click **Start New Session** (top right of the tab). This clears all results and resets the source folder.

Tab 2: Add Detector

Use this tab to register acoustic detector units deployed in the field.

1. Enter a **Detector ID** (e.g., Detector-A1).
2. Enter the **Latitude** (must be between -90 and 90).
3. Enter the **Longitude** (must be between -180 and 180).
4. Click **Save Detector**.

A table of all registered detectors is displayed below the form.

> **Note:** Duplicate entries (same ID and coordinates) are rejected automatically.

Tab 3: Add Species

Use this tab to register bat species that the model can identify.

1. Enter an **Abbreviation** — letters and numbers only, maximum 16 characters (e.g., MYLU).
2. Enter the **Latin Name** (e.g., Myotis lucifugus).
3. Optionally enter a **Common Name** (e.g., Little Brown Bat).
4. Click **Save Species**.

A table of all registered species is displayed below the form.

> **Note:** Duplicate entries (same abbreviation and Latin name) are rejected automatically.

Tab 4: Add Training Data

Use this tab to upload labelled audio files that will be used to train or improve the model.

1. **Select a Species** — use the search box to filter the list, then click the species you want.
2. **Select a Detector** — use the search box to filter the list, then click the relevant detector.
3. **Upload Files** — drag and drop .wav files into the uploader, or click **Browse files**. Maximum file size is 200 MB per file.
4. Click **Save Training Data**.

A summary table of all saved training entries (species, detector, and file count) is shown below the form.

> **Note:** At least one species and one detector must be registered before training data can be saved.

Tab 5: Train New Model

Use this tab to submit a model training job using your registered detectors and species.

1. Use the **Search detectors** field to filter the list if needed.
2. Tick the checkbox next to each **detector** you want to include.
3. For each selected detector, tick the **species** checkboxes that should be included in that detector's training data.
4. Review the **Selected for training** summary that appears at the bottom.
5. Click **Train Model** to submit the job.

> **Note:** Every selected detector must have at least one species chosen before the job can be submitted. If any detector has no species selected, an error message will appear.