Purpose / Vision

Define CS, fit into CC

Focus on J&P, tap into BE, understand RC

Identify strong TR & EM

Explore AS, differentiate

Focus on J&P, tap into BE, understa

Extract online & offline CH of BE

1. CUSTOMER SEGMENT(S) — CS

Field researchers and ecologists monitoring butterfly populations.

Biology educators and students.

Citizen science enthusiasts and nature photographers.

NGOs and biodiversity conservation groups.

6. CUSTOMER CONSTRAINTS — CC

Limited access to expert help in real-time.

No stable internet connection in field conditions.

Inability to distinguish between visually similar species.

Budget limitations for costly identification equipment or services.

5. AVAILABLE SOLUTIONS — AS

Printed field guides and entomology books.

Manual classification by experts or forums (e.g., iNaturalist).

General-purpose image recognition tools (low accuracy for butterflies).

Some mobile apps with limited datasets or no offline functionality.

2. JOBS-TO-BE-DONE / PROBLEMS — J&P

Identifying butterfly species from photographs without requiring expertise.

Creating digital records of butterfly sightings efficiently.

Supporting biodiversity research with data-driven tools.

Engaging the public in conservation and environmental awareness.

9. PROBLEM ROOT CAUSE — RC

The need for expert knowledge to classify over 75+ butterfly species.

Field identification is challenging due to subtle visual differences.

Limited access to real-time help, especially in remote areas.

Existing solutions are too slow or not user-friendly.

7. BEHAVIOUR — BE

Uploading photos to forums or field guides for help.

Comparing images manually with reference books.

Recording butterfly sightings in personal notebooks or spreadsheets.

Searching online for matching species images.

3. TRIGGERS — TR

Lack of immediate access to butterfly identification experts.

Delays in manual classification for research and reporting.

Mobile users looking for instant, interactive identification tools.

Seeing other digital nature tools in use (e.g., plant ID apps like PlantNet).

10. YOUR SOLUTION — SL

We provide a web-based AI classifier that predicts butterfly species from images using a fine-tuned VGG16 model. Users simply upload an image and receive an instant prediction. The system is accessible, visually engaging, and designed for ease of use across researchers, educators, and citizen scientists. It requires no special equipment or prior expertise, thus removing key barriers to butterfly identification.

8. CHANNELS of BEHAVIOUR — CH

8.1 ONLINE

Uploading images to Google, iNaturalist, or biodiversity databases.

Using educational YouTube videos or butterfly databases.

Sharing photos in conservation WhatsApp or Telegram groups.

8.2 OFFLINE

Field journals and notebooks.

In-person consultations with experts.

Museum or university identification workshops

4. EMOTIONS: BEFORE / AFTER — EM

Before: Confused, unsure of the species, frustrated with slow manual ID.

After: Confident, curious, engaged, and empowered to explore nature further.