

## 6) Basic Demo Result Report (基本 Demo 結果報告)

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### Demo objective

Demonstrate real-time facial expression recognition (FER) from webcam/video using the trained model pipeline.

### Demo entrypoint

- Main demo script: ``demo/realtime_demo.py``
- Related inference helper: ``scripts/realtime_infer_arcface.py``

### What the demo does

- Captures frames from a camera/video.
- Detects a face (supported detectors in code).
- Applies preprocessing consistent with training (includes CLAHE when enabled).
- Runs FER model inference.
- Applies temporal smoothing to stabilize predictions.
- Writes a CSV log of results.

### Inputs/outputs

- Input: webcam feed or video path (configured by args in demo script)
- Outputs:
  - Per-frame predictions and timestamps saved into the demo output folder (``demo/outputs/``)
  - Optional screenshots / debug visualizations depending on args

### Current results snapshot

- This mini-report documents the **demo pipeline availability and logging outputs**.

- Quantitative demo metrics (FPS, latency, flip-rate) are **measurable** from:
  - runtime logs
  - generated per-frame CSV
  - and should be reported after a dedicated demo run on the target machine.

TBD note (requires a real demo run):

- This report intentionally does not claim FPS/latency/flip-rate numbers because no demo CSV from a timed run is attached here.

### **How to validate (quick checklist)**

- Demo runs without crashing on Windows.
- Face box is detected and displayed.
- Emotions update smoothly (not flickering every frame).
- CSV log file is created and contains timestamp + probabilities/label.

### **Next steps**

- Run the demo for 2–3 minutes, then compute:
  - average FPS
  - mean/median inference latency
  - label flip-rate per minute
- Add a small script to summarize the CSV into these KPIs.