

AI in Healthcare: Triage at a Glance

Companion to the interactive demo: (Beat the Machine – Can you Triage Better than AI?)

1. Introduction

What is triage?

Deciding how urgently a patient needs care so that help arrives at the right time.

Why this matters:

In emergency rooms, rapid and correct triage can save lives.

What the demo does:

Lets you try 7 short patient cases, make triage decisions, and compare yourself to an AI model and the 'ground truth'.

2. How to Play

1. Read each patient's short story and vital signs.

2. Choose a triage level:

- Severe (Red) — urgent
- Intermediate (Orange) — watch closely
- Mild (Green) — safe to wait

3. Reveal the AI's prediction.

4. See how you and the AI scored, and explore “what-if” scenarios by adjusting vital signs.

3. The Seven Cases & Concepts

Case	Title	AI Concept Introduced	Key Takeaway
1	Grandad at the market	Supervised learning	AI learns from labelled examples (vitals → triage). Poor labels = poor model.
2	Teacher with a stubborn fever	Data representation	How we encode real-world data affects what AI can learn.
3	Student with a sore throat	Evaluation	Missing severe cases is worse than extra alerts in safety-critical systems.

4	Office worker winded on stairs	Decision boundaries	Small changes near boundaries can flip predictions.
5	Parent speaking in short phrases	Bias & coverage	Under-represented groups can lead to worse predictions.
6	Retiree with chronic lung disease	Explainability & confidence	Predictions should come with reasons and uncertainty.
7	Palpitations during pregnancy	Out-of-distribution (OOD)	Models should be cautious when faced with unfamiliar cases.

4. Visuals

AI in Healthcare: Can You Predict Patient Priority?



Beat the Machine — Can You Triage Better than AI?

(AI in Healthcare: Triage Through 7 Cases and When It Fails)

Triage means deciding how urgently each patient needs care so the right help arrives at the right time. In busy clinics and emergency rooms, it helps teams focus on those who need help first.

In this demo, you'll work through 7 short cases and choose a level:

- Severe (Red) — needs urgent attention
- Intermediate (Orange) — monitor closely
- Mild (Green) — likely safe to wait

Vital signs (plain language):

- Heart Rate (HR): heartbeats per minute. Very high or very low can be concerning.
- Respiratory Rate (RR): breaths per minute. Higher can mean the body is working hard.
- Oxygen Saturation (SpO₂): how much oxygen is in the blood. Lower is dangerous.
- Temperature: body heat (°C). Higher can signal infection or illness.

You'll see how an AI system would classify the same cases, and where it can go wrong—for example due to bias in training data or out-of-distribution cases. We'll track your score vs the ground truth and compare it to the AI's score.

Opening Screen

Case 2/7

Teaching focus: Data representation.
Supervised learning is the most common ML type—see how labeled examples guide predictions.

Case 2 — Teacher with a stubborn fever
A 63-year-old teacher has a high fever and gets breathless walking up stairs, but can speak in full sentences.
Patient: Maria S. (age 63)

- Heart rate: 104 bpm
- Oxygen saturation (SpO₂): 91%
- Temperature: 39.0 °C
- Breathing rate: 24 /min
- Ethnicity: White
- Comorbidity: None

Reveal AI prediction Next case ▶ Restart

AI view (features)

AI prediction: Severe (Red)

Confidence (distance to nearest boundary): 80%

Adjust & explore (unlocks after Reveal)

If vitals changed → Severe (Red)

SpO₂ vs Heart Rate Temperature vs Breathing Rate

Your decision (traffic-light)

☐ Mild (Green)
☐ Intermediate (Orange)
☒ Severe (Red)

Caution level

More cautious → more Severe/Intermediate 50

0 100

Vital signs

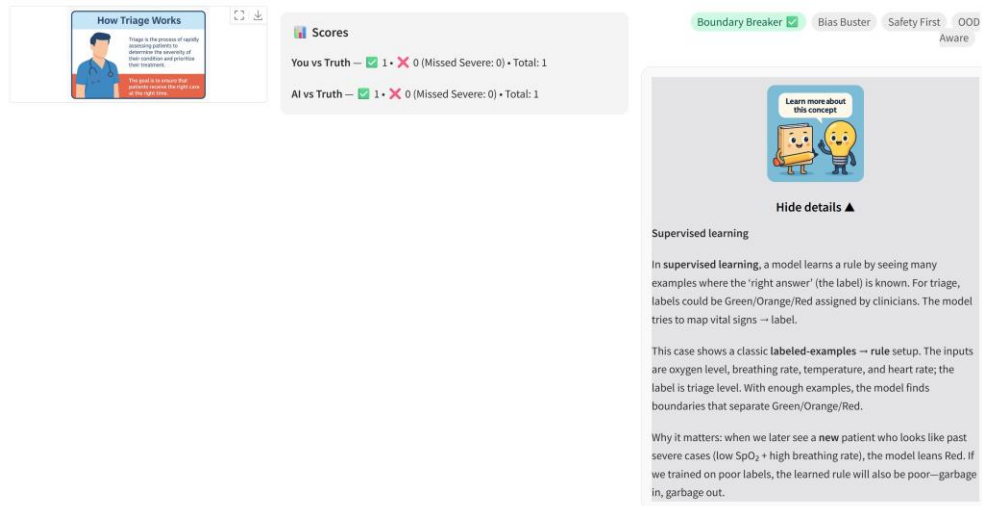
Heart Rate (bpm) 104

60 160

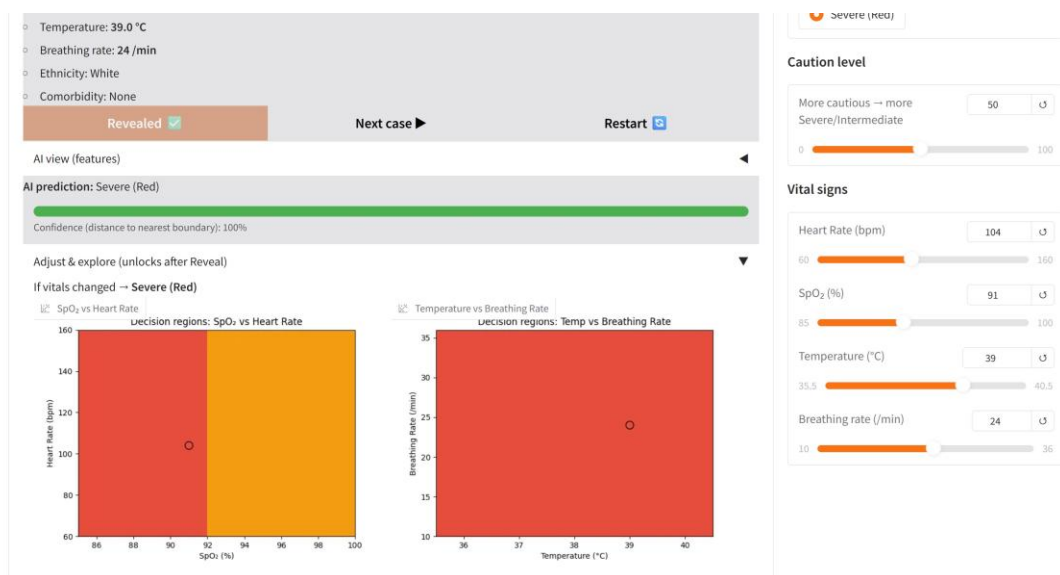
SpO₂ (%) 91

60 100

Screenshot showing a specific case



Screenshot showing the "Learn More" and the Scoring Feature



Screenshot showing ability to use the sliders to change vital sign values and visualize the decision boundary in a two-dimensional space

5. What You Learn

- AI is a powerful tool but not infallible.
- Model performance depends heavily on training data quality, representation, and coverage.
- In healthcare, safety requires careful design, transparency, and human oversight.

6. Try It Yourself

Open the demo on the event computer by clicking the icon **"Beat the Machine – AI Triage"** on the desktop.

Follow the on-screen instructions to play through all 7 cases.

7. For questions or follow-up resources

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