

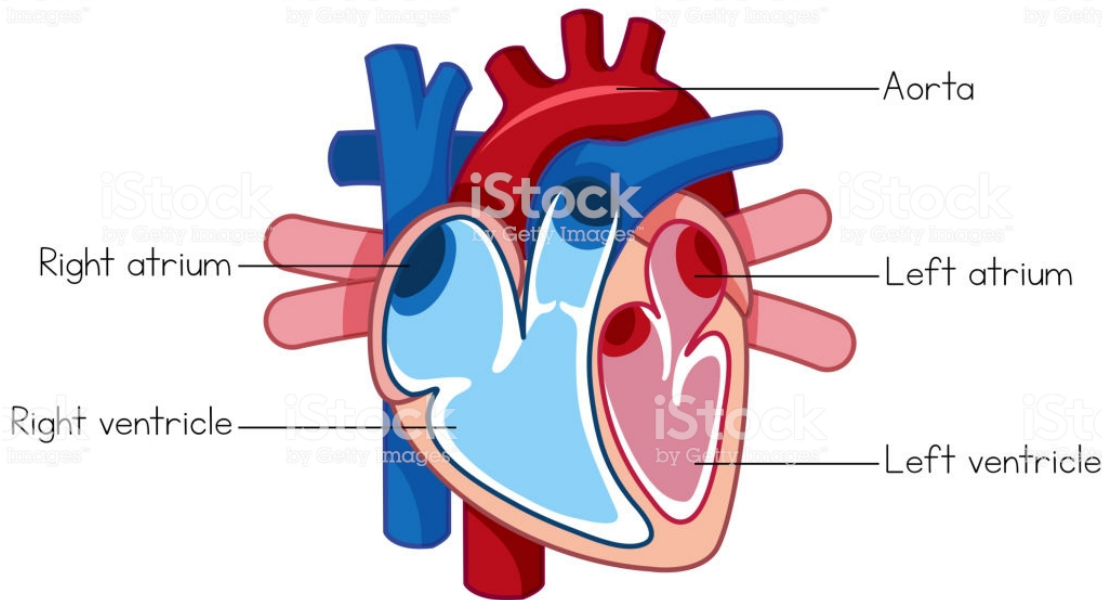
Thanks for participating in our study!

You were selected as a possible participant in this study because you are an MTurk worker, and your participation in this research study is voluntary.

Please read:

For each task, you'll see a **heartbeat** from a patient with Arrhythmia. An **Artificial Intelligence (AI) prediction** is trying to determine the type of heartbeat.

Parts of a Heart



There are 5 types of heartbeats:

- **N (normal, non-ectopic):** a normal heartbeat
- **S (supraventricular ectopic):** a premature beat that occurs in the atrium
- **V (ventricular ectopic):** a premature beat that occurs in the ventricles
- **F (fusion):** a fusion of a normal (N) and ventricular (V) beat
- **Q (unknown):** a noisy beat with unknown classification

First, we want to know if the AI was correct in its decision.

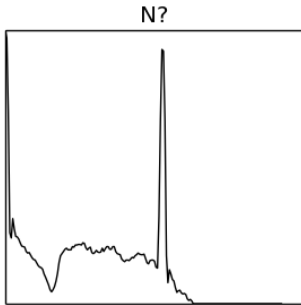
Next, there will be two methods explaining why the AI made this decision.

We want your opinion on **which is a better explanation** for this decision.

Please be sure to select one of the methods for every task.

Task 1

An AI algorithm thinks this is a N beat.



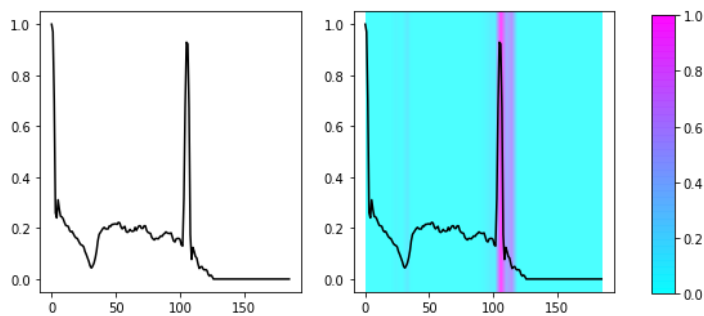
Correctness: The heartbeat is actually a N heartbeat. Did the AI classify this heartbeat correctly?

☐ Yes

☐ No

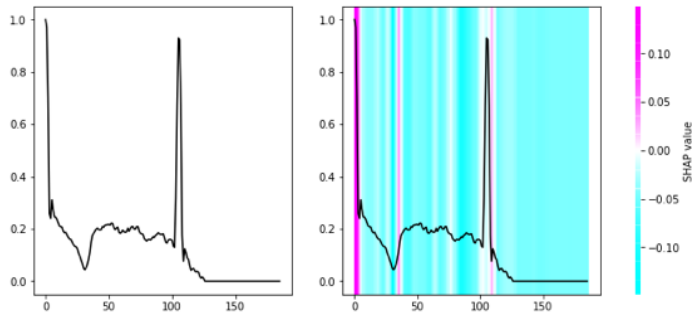
Explanation 1: Heatmap

Here is a heatmap of where in the heartbeat the AI thinks are most important.



Explanation 2: Positive/Negative Analysis

The AI decision was influenced positively by the magenta areas and negatively by blue areas.

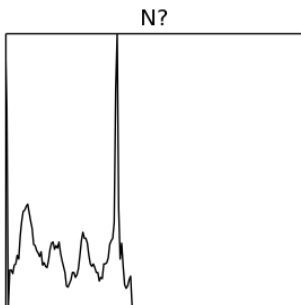


Which explanation is better?

- ☐ Heatmap (top)
- ☐ Positive/Negative Analysis (bottom)

Task 2

An AI algorithm thinks this is a N beat.

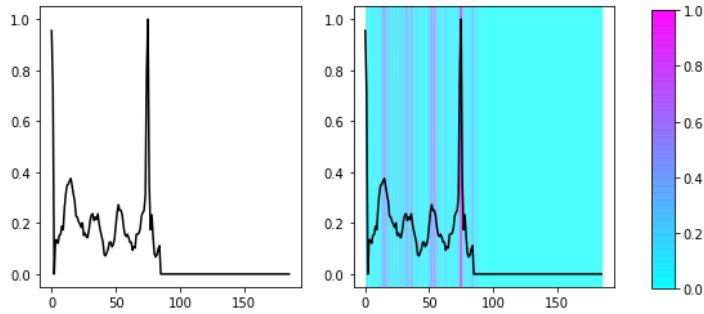


Correctness: The heartbeat is actually a N heartbeat. Did the AI classify this heartbeat correctly?

- ☐ Yes
- ☐ No

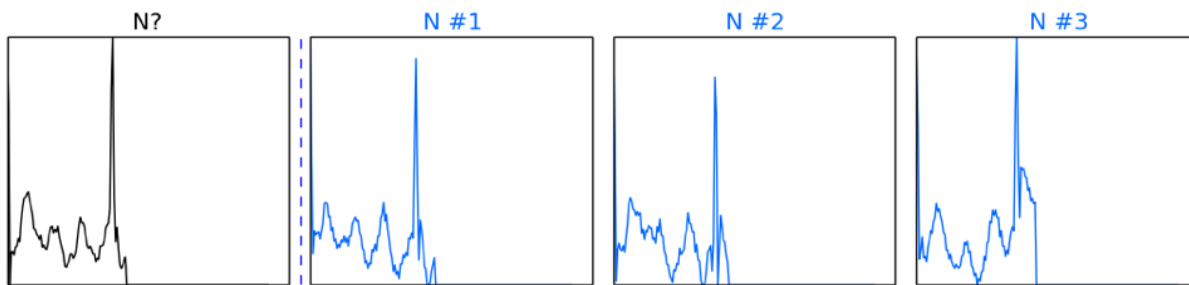
Explanation 1: Hot Pixels

Magenta indicates the exact moments the AI thinks are important.



Explanation 2: Training Examples

The AI thinks this heartbeat is similar to other already known examples of N heartbeats. They make look very similar but they are actually all different heartbeats.

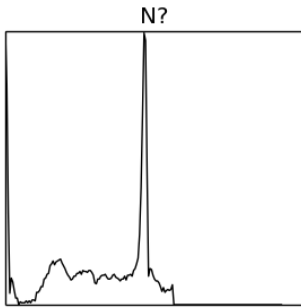


Which explanation is better?

- ☐ Hot Pixels (top)
- ☐ Training Examples (bottom)

Task 3

An AI algorithm thinks this is a N beat.



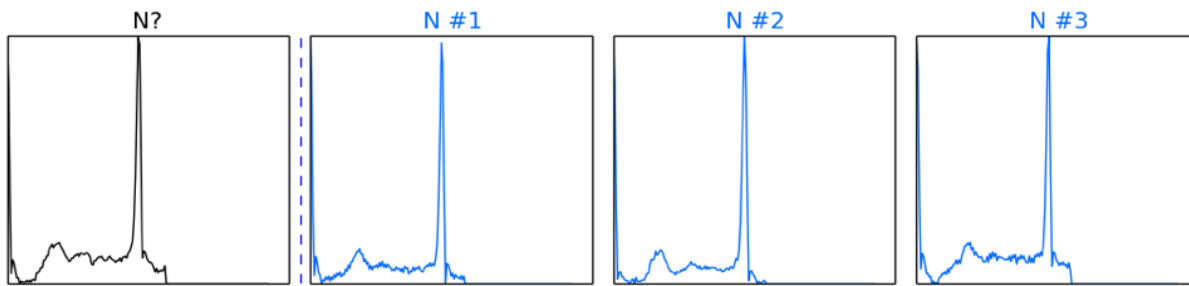
Correctness: The heartbeat is actually a N heartbeat. Did the AI classify this heartbeat correctly?

☐ Yes

☐ No

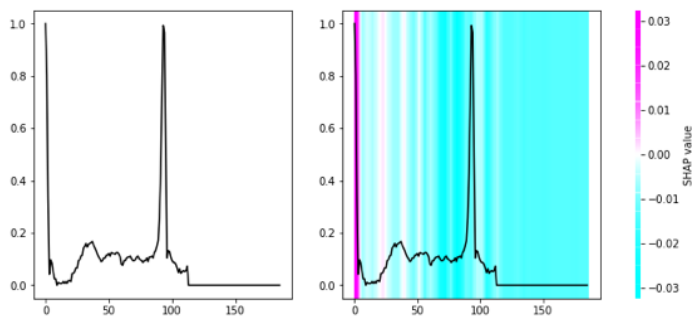
Explanation 1: Training Examples

The AI thinks this heartbeat is similar to other already known examples of N heartbeats. They make look very similar but they are actually all different heartbeats.



Explanation 2: Positive/Negative Analysis

The AI decision was influenced positively by the magenta areas and negatively by blue areas.

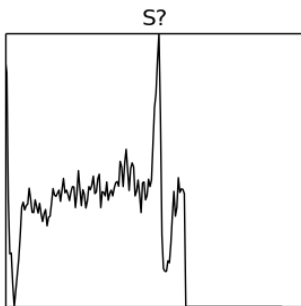


Which explanation is better?

- ☐ Training Examples (top)
- ☐ Positive/Negative Analysis (bottom)

Task 4

An AI algorithm thinks this is a S beat.

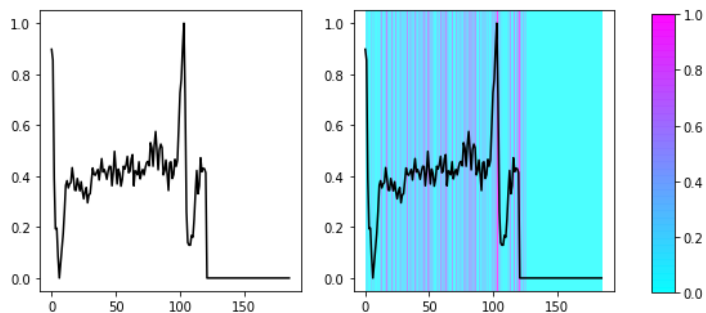


Correctness: The heartbeat is actually a S heartbeat. Did the AI classify this heartbeat correctly?

- ☐ Yes
- ☐ No

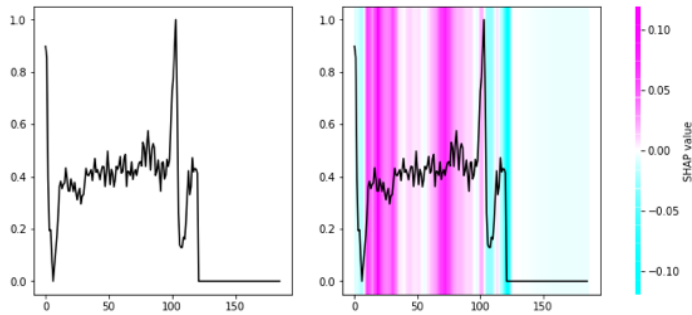
Explanation 1: Hot Pixels

Magenta indicates the exact moments the AI thinks are important.



Explanation 2: Positive/Negative Analysis

The AI decision was influenced positively by the magenta areas and negatively by blue areas.

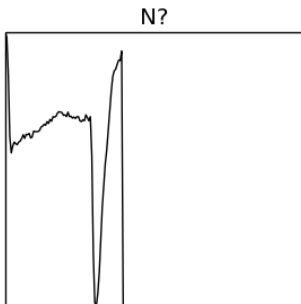


Which explanation is better?

- ☐ Hot Pixels (top)
- ☐ Positive/Negative Analysis (bottom)

Task 5

An AI algorithm thinks this is a N beat.

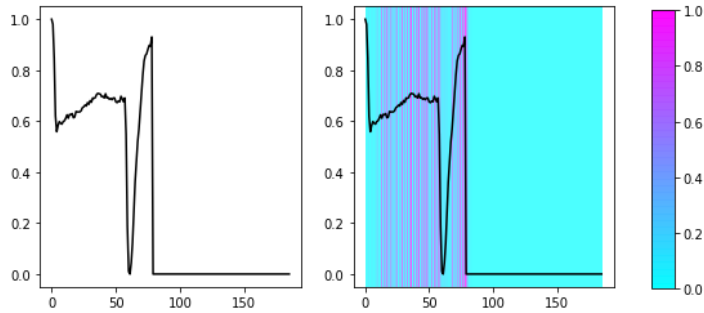


Correctness: The heartbeat is actually a N heartbeat. Did the AI classify this heartbeat correctly?

- ☐ Yes
- ☐ No

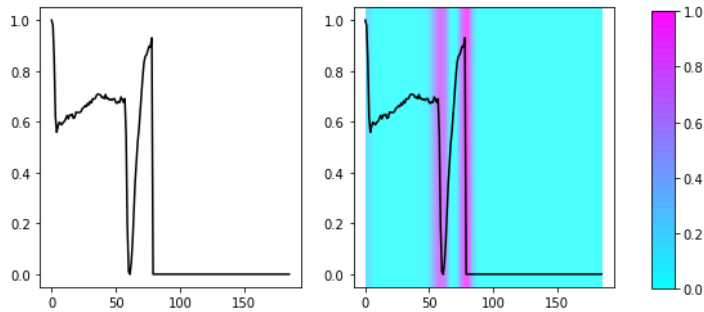
Explanation 1: Hot Pixels

Magenta indicates the exact moments the AI thinks are important.



Explanation 2: Heatmap

Here is a heatmap of where in the heartbeat the AI thinks are most important.



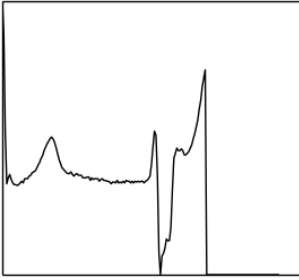
Which explanation is better?

- ☐ Hot Pixels (top)
- ☐ Heatmap (bottom)

Task 6

An AI algorithm thinks this is a N beat.

N?



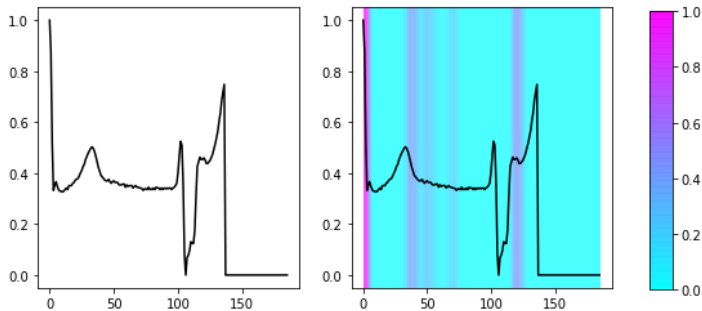
Correctness: The heartbeat is actually a N heartbeat. Did the AI classify this heartbeat correctly?

☐ Yes

☐ No

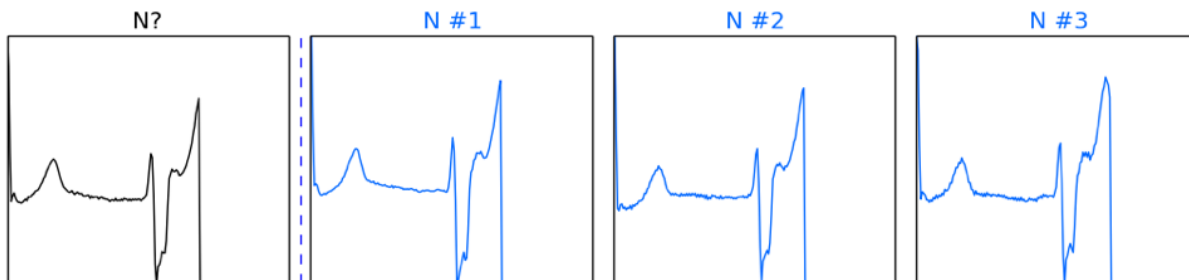
Explanation 1: Heatmap

Here is a heatmap of where in the heartbeat the AI thinks are most important.



Explanation 2: Training Examples

The AI thinks this heartbeat is similar to other already known examples of N heartbeats. They make look very similar but they are actually all different heartbeats.

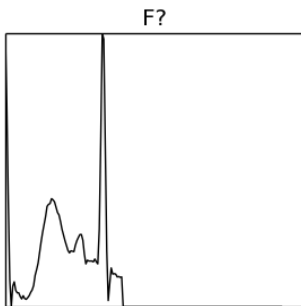


Which explanation is better?

- ☐ Heatmap (top)
- ☐ Training Examples (bottom)

Task 7

An AI algorithm thinks this is a F beat.

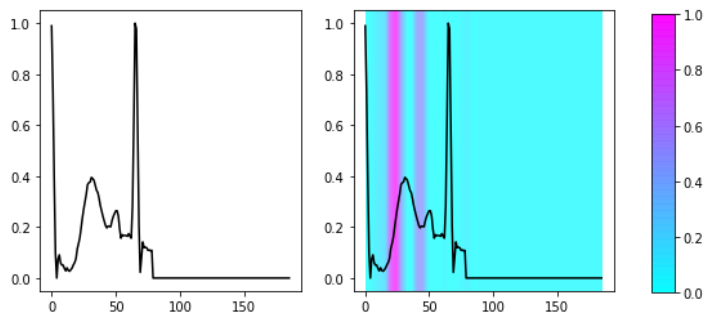


Correctness: The heartbeat is actually a N heartbeat. Did the AI classify this heartbeat correctly?

- ☐ Yes
- ☐ No

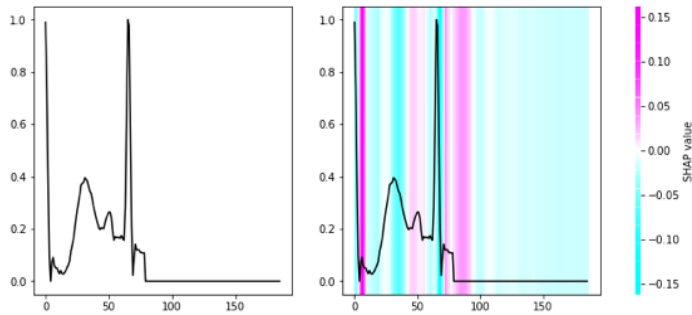
Explanation 1: Heatmap

Here is a heatmap of where in the heartbeat the AI thinks are most important.



Explanation 2: Positive/Negative Analysis

The AI decision was influenced positively by the magenta areas and negatively by blue areas.

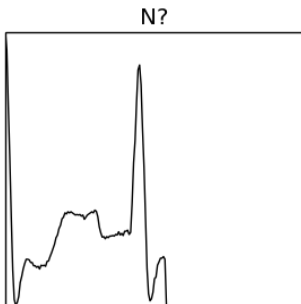


Which explanation is better?

- ☐ Heatmap (top)
- ☐ Positive/Negative Analysis (bottom)

Task 8

An AI algorithm thinks this is a N beat.

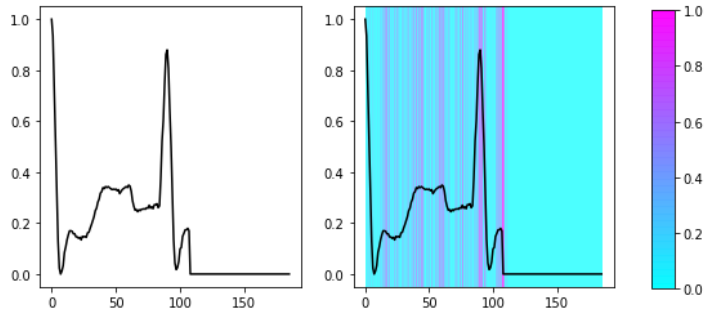


Correctness: The heartbeat is actually a N heartbeat. Did the AI classify this heartbeat correctly?

- ☐ Yes
- ☐ No

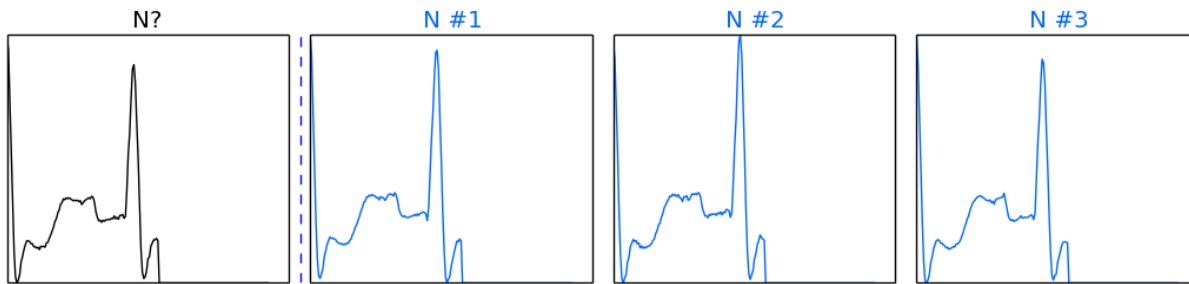
Explanation 1: Hot Pixels

Magenta indicates the exact moments the AI thinks are important.



Explanation 2: Training Examples

The AI thinks this heartbeat is similar to other already known examples of N heartbeats. They make look very similar but they are actually all different heartbeats.

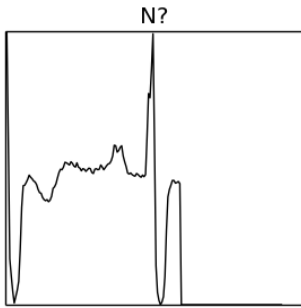


Which explanation is better?

- ☐ Hot Pixels (top)
- ☐ Training Examples (bottom)

Task 9

An AI algorithm thinks this is a N beat.



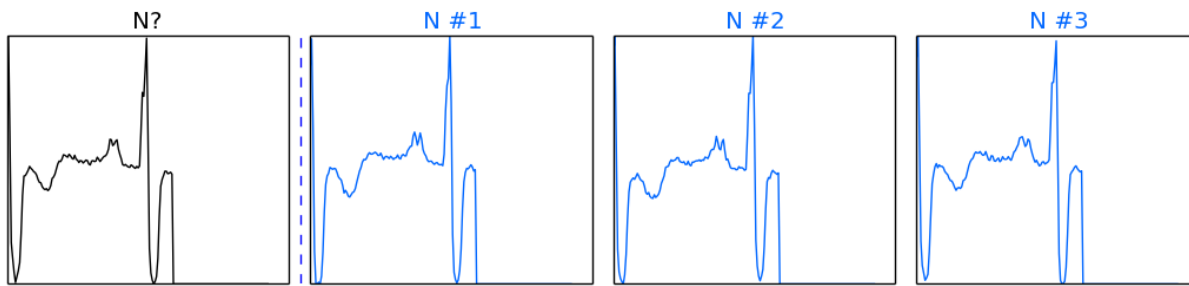
Correctness: The heartbeat is actually a N heartbeat. Did the AI classify this heartbeat correctly?

☐ Yes

☐ No

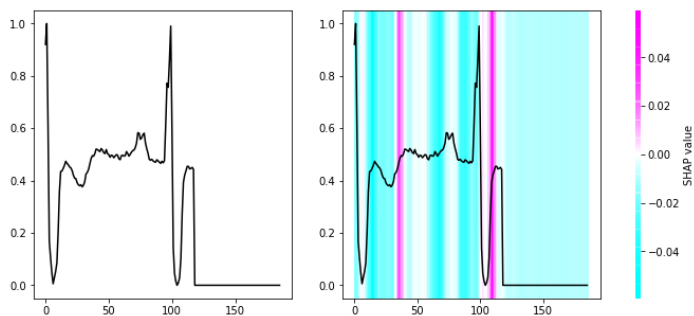
Explanation 1: Training Examples

The AI thinks this heartbeat is similar to other already known examples of N heartbeats. They make look very similar but they are actually all different heartbeats.



Explanation 2: Positive/Negative Analysis

The AI decision was influenced positively by the magenta areas and negatively by blue areas.

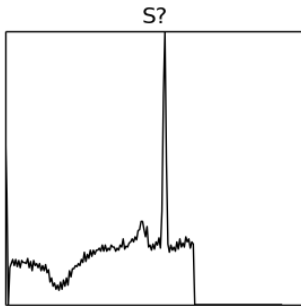


Which explanation is better?

- ☐ Training Examples (top)
- ☐ Positive/Negative Analysis (bottom)

Task 10

An AI algorithm thinks this is a S beat.

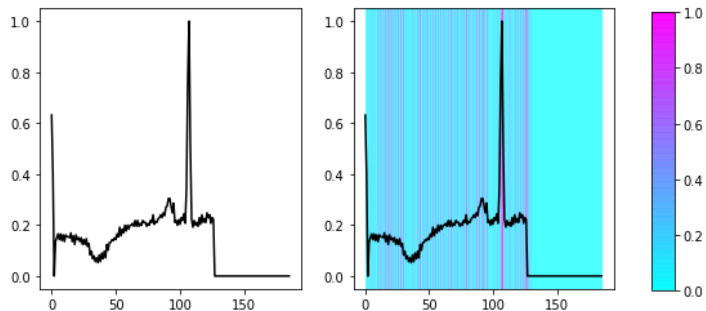


Correctness: The heartbeat is actually a N heartbeat. Did the AI classify this heartbeat correctly?

- ☐ Yes
- ☐ No

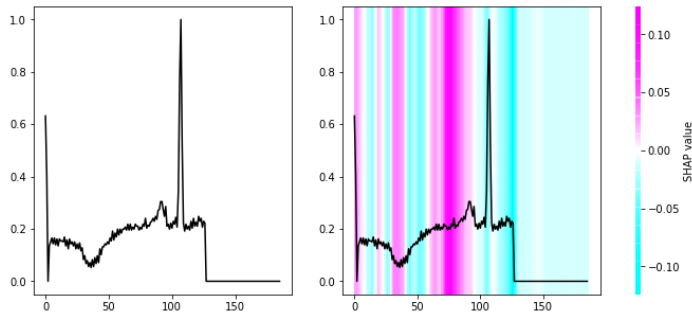
Explanation 1: Hot Pixels

Magenta indicates the exact moments the AI thinks are important.



Explanation 2: Positive/Negative Analysis

The AI decision was influenced positively by the magenta areas and negatively by blue areas.

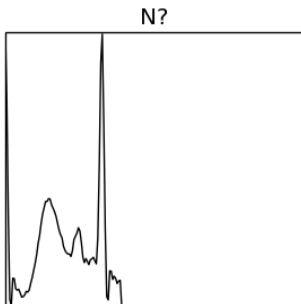


Which explanation is better?

- ☐ Hot Pixels (top)
- ☐ Positive/Negative Analysis (bottom)

Task 11

An AI algorithm thinks this is a N beat.

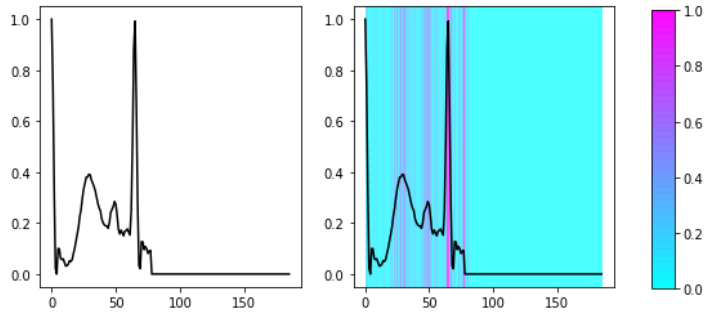


Correctness: The heartbeat is actually a N heartbeat. Did the AI classify this heartbeat correctly?

- ☐ Yes
- ☐ No

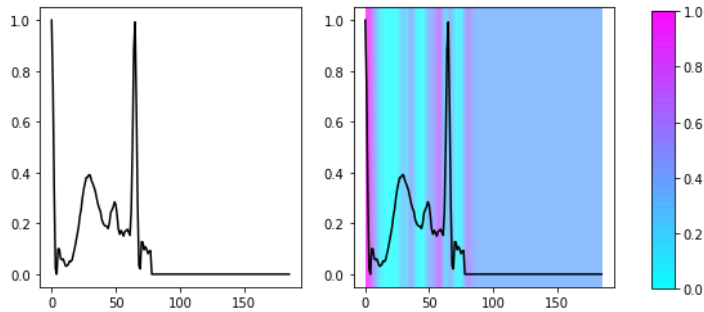
Explanation 1: Hot Pixels

Magenta indicates the exact moments the AI thinks are important.



Explanation 2: Heatmap

Here is a heatmap of where in the heartbeat the AI thinks are most important.

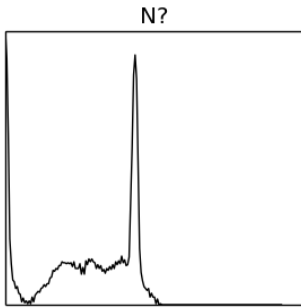


Which explanation is better?

- ☐ Hot Pixels (top)
- ☐ Heatmap (bottom)

Task 12

An AI algorithm thinks this is a N beat.



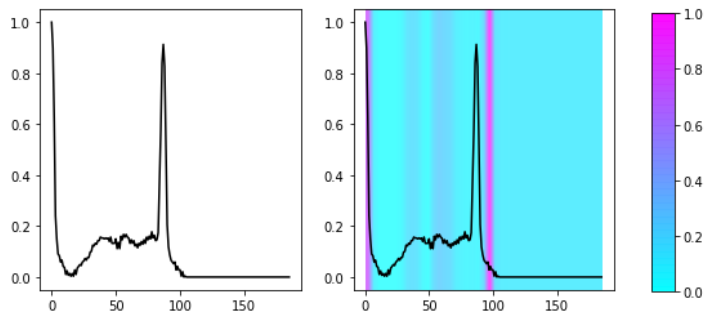
Correctness: The heartbeat is actually a N heartbeat. Did the AI classify this heartbeat correctly?

☐ Yes

☐ No

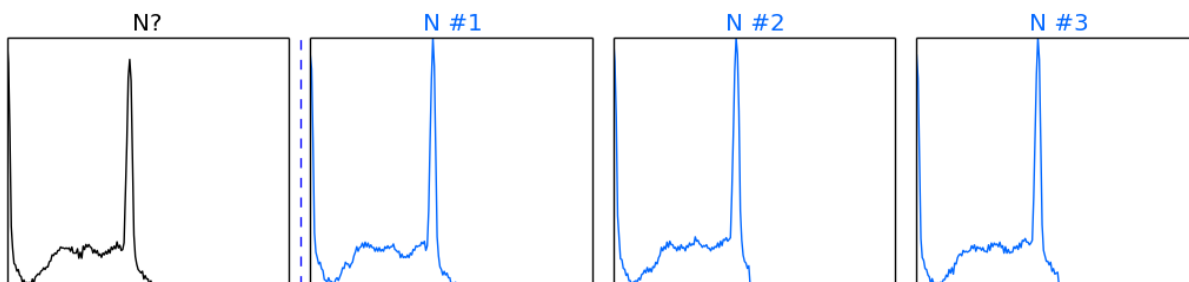
Explanation 1: Heatmap

Here is a heatmap of where in the heartbeat the AI thinks are most important.



Explanation 2: Training Examples

The AI thinks this heartbeat is similar to other already known examples of N heartbeats. They make look very similar but they are actually all different heartbeats.



Which explanation is better?

- ☐ Heatmap (top)
- ☐ Training Examples (bottom)

Note: only click submit once, or your entry may be lost.

Submit