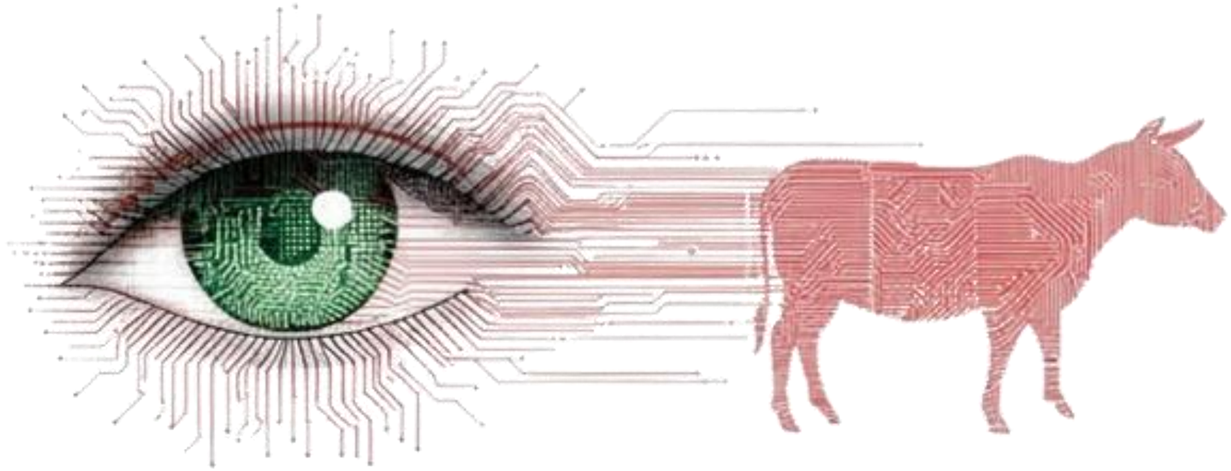
MÁS ALLÁ DEL OJO HUMANO:

INTELIGENCIA ARTIFICIAL EN MATADEROS

Fecha: 05 de junio de 2026
Lugar: Sala Ernest Lluch, Ministerio de Sanidad, Paseo del Prado, 18-20, 28014 - Madrid.



Carlos Morales - Deloitte

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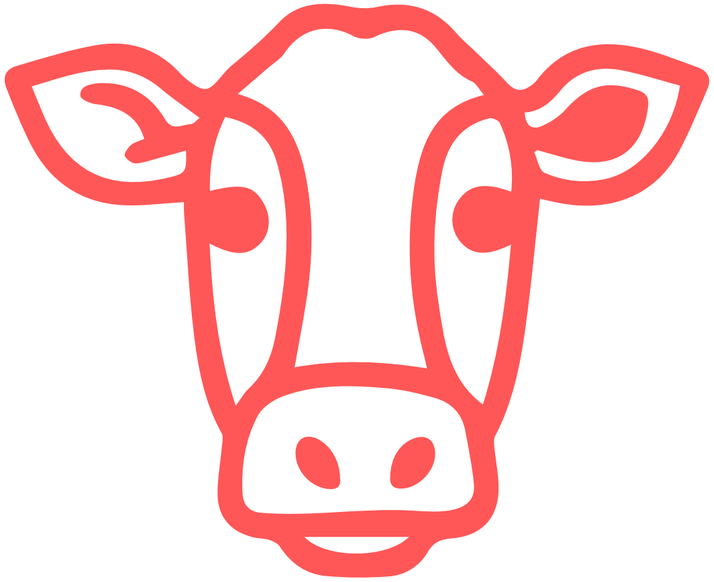


AI4Animals – Nuestra ambición compartida

Nuestra ambición

Reducir el estrés y el sufrimiento animal evitable e innecesario mediante tecnología innovadora y su correcta implementación, en colaboración estrecha con organizaciones comprometidas

Impacto en los medios

THE TIMES | Saturday July 10 2021

Abuse at abattoirs caught on video but no one watches it

Ben Webster Environment Editor

Animals are being abused in slaughterhouses in front of CCTV cameras but no action is being taken because the video is not being checked.

The government had claimed that making cameras compulsory in slaughterhouses in England from 2018 would "cement the UK's position as a global leader in animal welfare standards".

Animal Justice Project (AJP) secretly placed cameras beside official CCTV at G&GB Hewitt in Chester and a Gressingham Foods slaughterhouse in Redgrave, Suffolk. At Hewitt it filmed cows being beaten with sticks and struck on sensitive areas with electric prods; animals being cut and kicking, apparently still conscious after being stunned too briefly; and a piglet placed in hot water while apparently still alive.

At Gressingham, which supplies many supermarkets, ducks were seen being pushed into metal foot shackles and left for long periods while waiting to be killed. Workers used live birds to knock off feet from dead birds that had become wedged in the line. Birds were grabbed by the head, neck and wings.

Alick Simmons, a former government deputy chief vet, said the video showed apparent breaches of welfare laws, adding that at Hewitt "the handling, stunning and killing of piglets is barely adequate, the stunning equipment appears to fail on several occasions, repeated shouting by the operatives adds to the animals' distress and at no time are operatives seen to monitor the effectiveness of the stun".

Simmons said that the apparent breaches would have been detected if the recordings had been viewed by their "official vets", which are authorised by the Food Standards Agency (FSA).

Hewitt's vet reported no welfare non-compliances during the eight days AJP was filming, and during which it said it had recorded more than 30 breaches.

The FSA seized CCTV film from Hewitt after being informed by AJP of the abuses. It said that it could not comment as its investigation was continuing. It said that the Gressingham case "is currently under review by the Crown Prosecution Service".

Hewitt did not respond but forwarded questions to the Association of Independent Meat Suppliers, its trade body, which said that it seemed likely from AJP's film that animals had been "treated unacceptably" but many of AJP's allegations were "nonsense".

In November when AJP first made allegations about its slaughterhouse Gressingham said there was no clear evidence of abuse or neglect but that there were "actions that are not representative of the high standards expected of our factory". Yesterday it said: "The incident was a result of human error and disciplinary action has been taken. The CPS are reviewing the incident to determine if there is a case to be answered."

Sainsbury's said it had investigated the Gressingham video and had "outlined a number of actions they were required to take".

Artificial eyes

The government is considering using artificial intelligence to analyse CCTV video at abattoirs to detect abuses more quickly and easily. The system, in use in the Netherlands and Germany, selects clips of incidents that are most likely to involve mistreatment. It can reduce 60 hours of video from six cameras to half an hour of clips then viewed by a vet. In tests it identified 90 per cent of problems. It can detect signs of life after animals have been stunned and spot a bottleneck that causes stress. Officials have met Deloitte, which developed the system with Eyes for Animals, to discuss introducing it.

Met nieuwe techniek wil de grootste slachter van Nederland

Zijn slimme camera's dé oplossing in slachthuis?

Slim cameratoezicht helpt om misstanden in slachthuizen eerder te signaleren en aan te pakken, zo blijkt uit onderzoek van hoogleraar dierenwelzijn Bas Rodenburg. Is dit de toekomst om excessen in de sector uit te bannen? Dis Stentor keek mee bij Vion, de grootste slachter van het land.

JENDA TERPSTRA
ARMON VEENEMAN

Trouw

OPINIE | RELIGIE&FILOSOFIE | DUURZAAMHEID&NATUUR | CULT

Dierenbescherming

Intelligente camera moet slachtvarkens beter beschermen tegen pijn en stress

Dierenbescherming, Deloitte, Eyes On
nals en vleesproducent Vion hebben samen een
w systeem voor cameratoezicht in slachterijen
kkeld.

Belgian Pork Group zet AI in aan de slachtlijn om dierenwelzijn te bewaken

6 december 2023 | Diergezondheid | reageer

AI4A *in a nutshell*

Qué es

AI4A se basa en modelos de IA y un cuadro de mando web que mejora significamente la videovigilancia, detectando automáticamente **incidencias en el manejo de los animales**

Reto

- La mayoría de los mataderos ya cuentan con **sistemas de videovigilancia**
- Esto genera **cientos de horas de grabaciones** cada día
- El personal tiende a revisar solo una **colección pequeña y aleatoria de grabaciones**
- Como consecuencia, la **mayoría de grabaciones nunca se revisan**
- Los sistemas actuales **no son capaces de identificar tendencias**, patrones o problemas estructurales

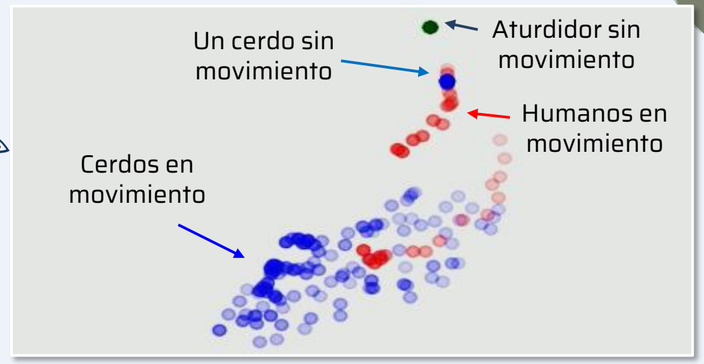
Cómo funciona

SOLUCIÓN IA

01 Detecciones

El algoritmo de AI4A detecta animales, personas y objetos, así como su interacción

02 Mapas de calor de movimiento



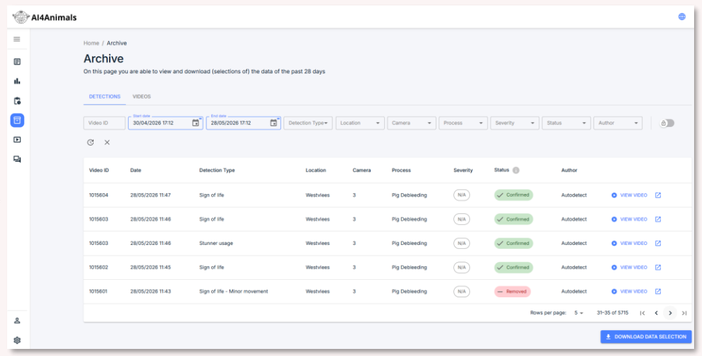
Las imágenes se traducen en mapas de calor de movimiento para detectar posibles anomalías

CUADRO DE MANDO

04 Reportes

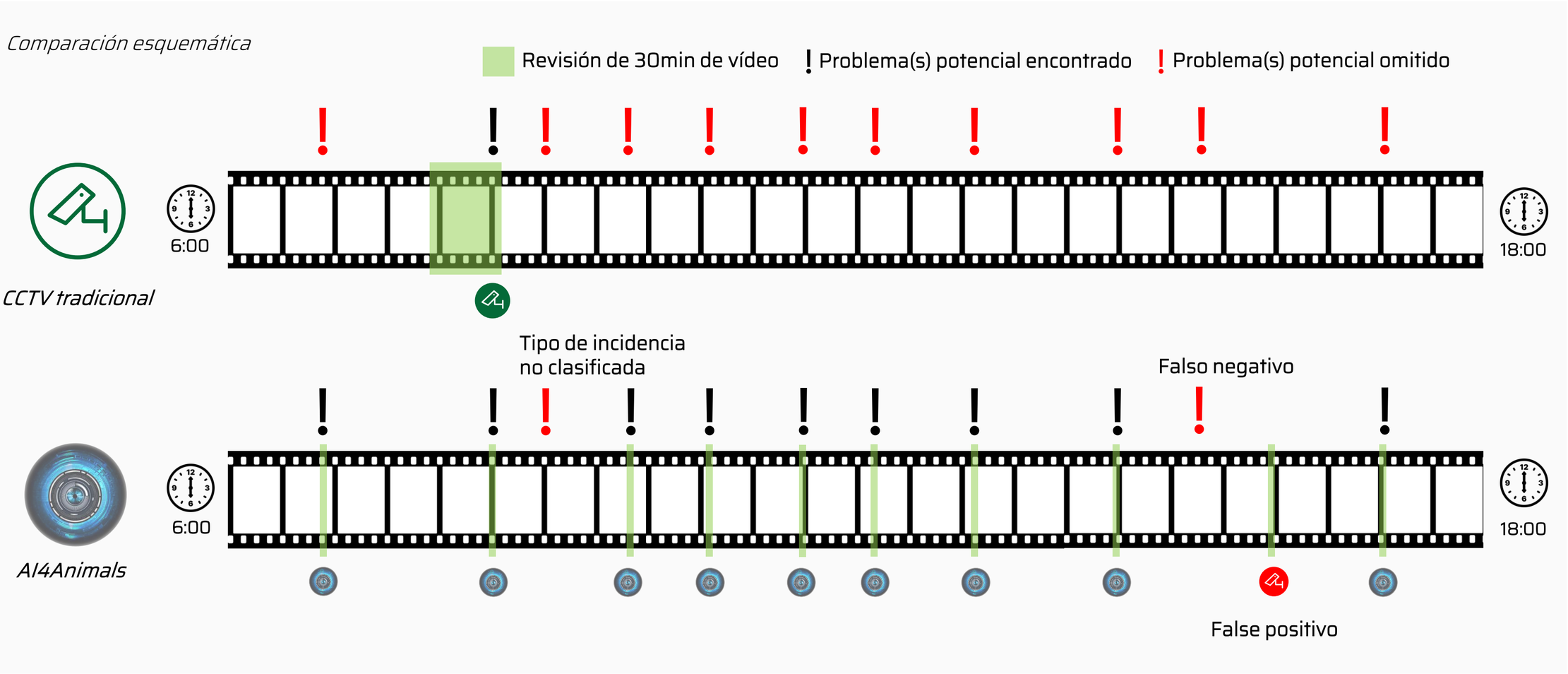
AI4A incluye reporte de tendencias de detecciones sobre el tiempo y por mataderos

03 Revisión de las detecciones



AI4A selecciona y agrega las grabaciones que contienen anomalías potenciales para ser revisadas

Videovigilancia tradicional *vs* IA



Ejemplo de módulos AI4Animals agrupados por etapa del proceso

Llegada/descarga

- Animales inmovilizados / muertos a la llegada (DoA)
- **Uso del aturdidor de emergencia**
- Cuellos de botella y aglomeraciones
- Comportamiento humano estresante
- Conteo de animales (99.8%)
- Resbalones y caída

- Difuminado / privacidad
- Alertas en tiempo real

Conducción

- Uso de picana / aturdidor
- Uso de paleta de arreo
- Uso de objeto no identificado
- Contacto físico innecesario
- **Patadas / golpes / arrastre**
- Impacto entre compuertas y animales
- Torcimiento de cola

- **Difuminado / privacidad**
- Alertas en tiempo real

Aturdimiento

- Control del tamaño del grupo
- **Signos de vida / reflejos**
- Movimientos respiratorios
- Reflejo corneal
- Incidencias en el cajón de aturdimiento
- Audio

- Difuminado / privacidad
- Alertas en tiempo real

Sangrado

- **Control de sangrado**
- Tiempo entre aturdimiento, incisión y sangrado
- Parada automática de la línea de proceso

- Difuminado / privacidad
- Alertas en tiempo real

Para más información, ver apéndices de las págs. 14 y 15

AI4Animals

Sign in with your username and password

Username

lschumacher

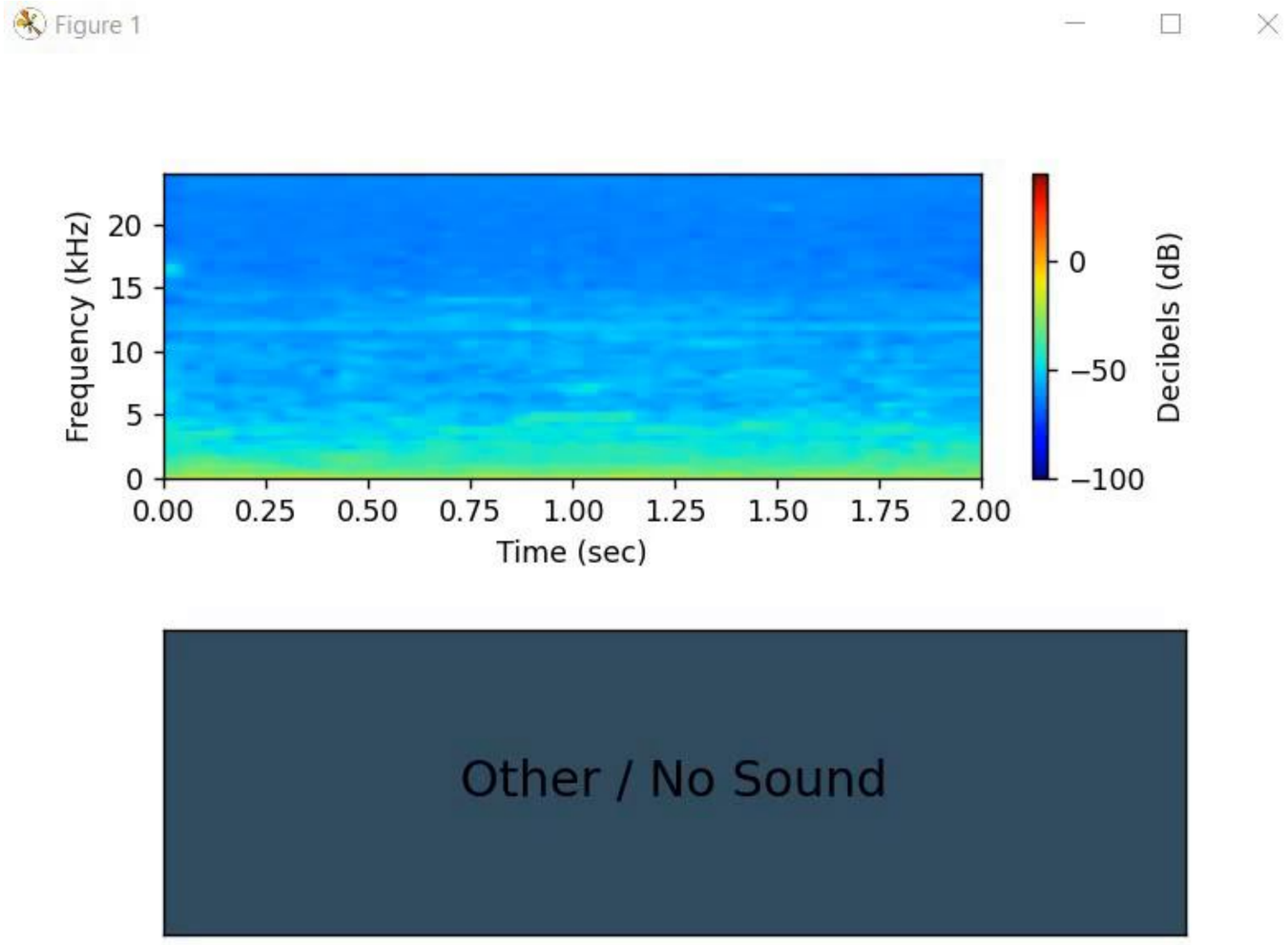
Password

••••••••••

Forgot your password?

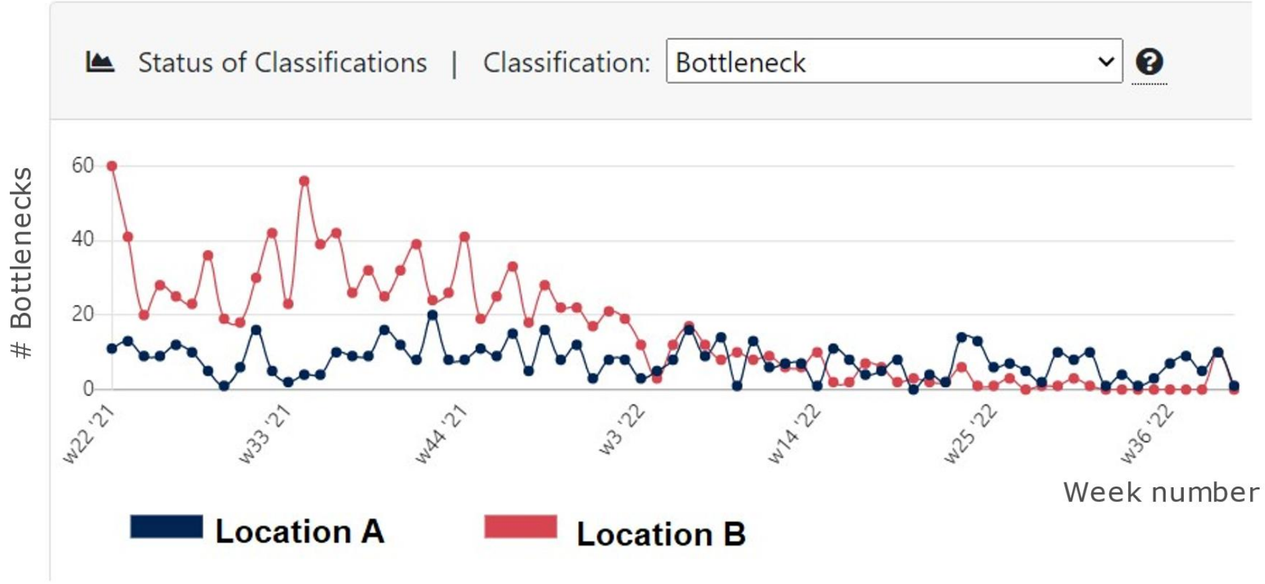
Sign in

Análisis de audio AI4Animals



Ejemplo de impacto

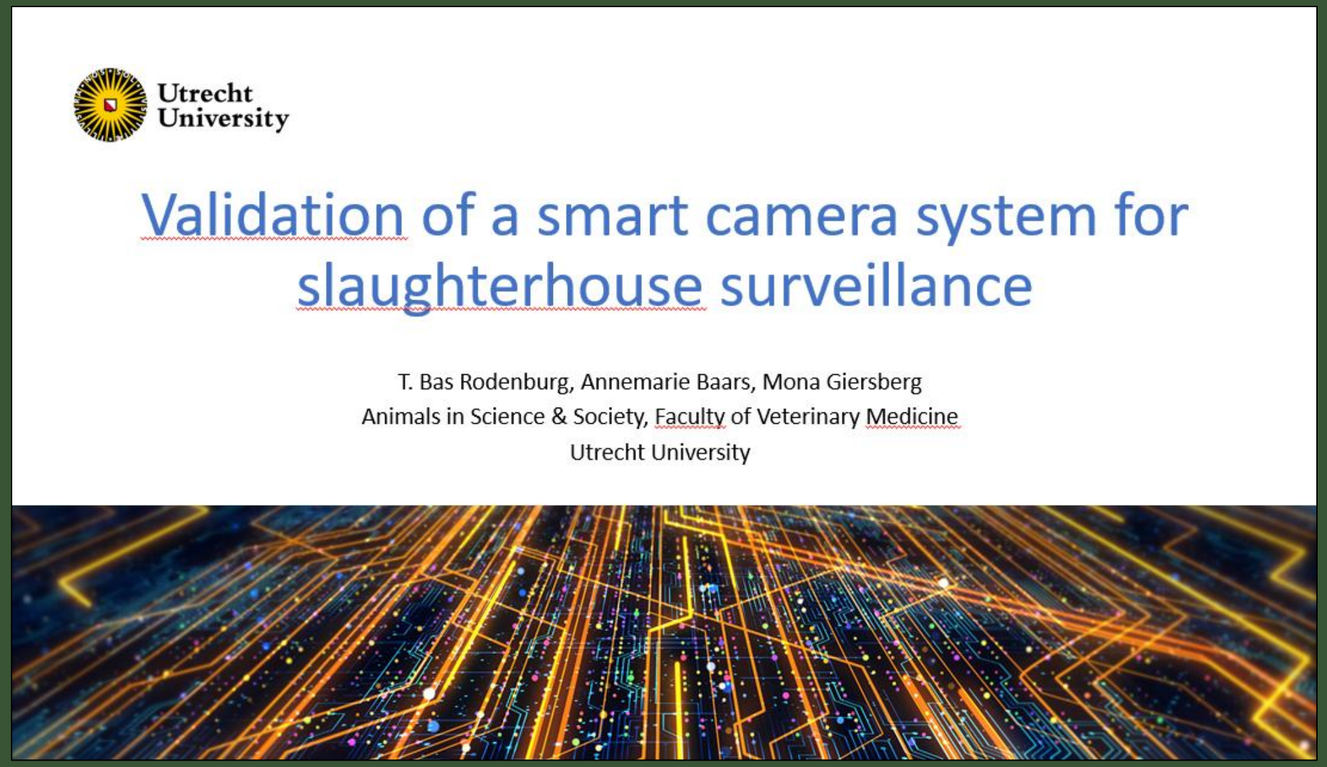
AI4A permite monitorizar las tendencias de aumento o disminución en el número y la gravedad de los problemas de manejo animal



Caso real de cliente

- **Demasiados animales en una zona provocan estrés**
- Con la ayuda de AI4A, el cliente pudo analizar las causas en el **matadero B**
- Conclusión: los problemas de cuellos de botella y estrés fueron causados principalmente por una **descarga mal coordinada de los animales por parte de los camioneros y el uso de palas**
- En base a esas observaciones, el cliente **ajustó los procesos de descarga y disminuyó el uso de palas**
- Esto resultó en una **disminución importante en los cuellos de botella**

Validación científica de AI4Animals
por el Prof. Dr. Ing. Rodenburg



"...el sistema AI4Animals provee una solución válida para monitorización inteligente..."

"El uso de la picana ya ha impulsado cambios en los protocolos y una supervisión más detallada en el área de aturdimiento"

Valor según los clientes de AI4Animals

- **Identificación más rápida** de incidencias en el manejo de animales
- **Informes y datos objetivos** en todas las instalaciones
- Oportunidad de **aprendizaje, entrenamiento y mejora**
- Permite la **comparación** entre diferentes mataderos
- Mejora de la operación al prevenir problemas en el manejo de animales
- Evita que los **incidentes** se conviertan en problemas **estructurales**

GRACIAS

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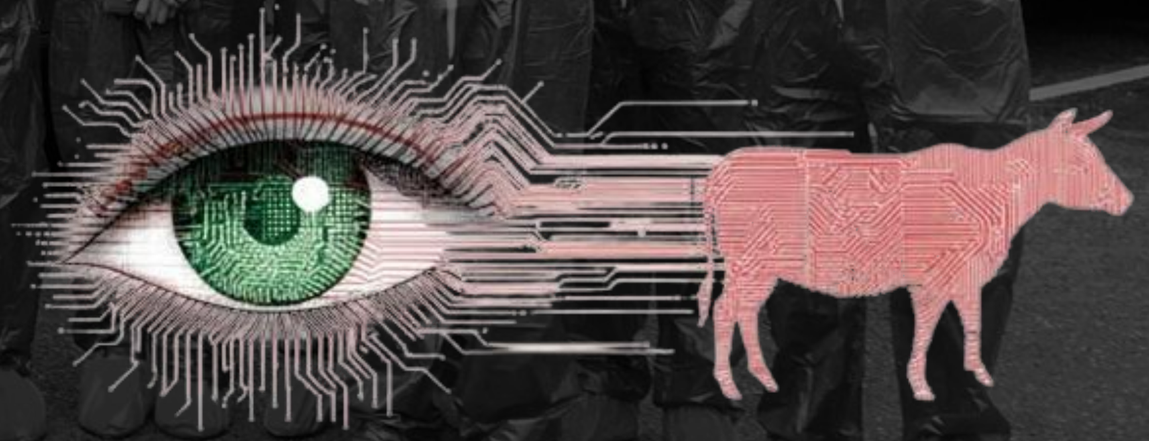

AI4Animals modules for pigs

Offloading phase	
No / minimal movement	Lack of or minimal pig movement for a certain time duration compared to the rest of the herd, indicating dead on arrival, (severe) lameness or other welfare issues
Emergency stunner use	The use of the emergency stunner after unloading the animal due to (severe) lameness or other welfare issues
Stressful human behavior	Detect a person walking into the group of pigs, obstructing the flow / walkway and causing stress
Use of paddle	Detect the use of paddles, touching or hitting pigs
Bottleneck	A certain group size of pigs in very close proximity to each other, not moving for a certain duration indicating crowding
Lairage phase	
Use of electric prod	Detect the use of the electric prod on a pig, including frequency
Emergency stunner use	The use of the emergency stunner after unloading the animal due to (severe) lameness or other welfare issues
Use of paddle	Detect the use of paddles, touching or hitting pigs
Group size control	Monitor the number of pigs in a group going into the gondola
Driving phase	
Use of electric prod	Detect the use of the electric prod on a pig, including frequency
Use of paddle	Detect the use of paddles, touching or hitting pigs
Group size control	Monitor the number of pigs in a group going into the gondola
Stunning phase	
Stun – stick interval	Measure the time interval between the stunning and the sticking of the pig
Cornea reflex after stunning	Monitor eye activity that indicates a cornea reflex
Debleeding phase	
Cut placement	Detect whether a cut has been made to bleed the pig
Blood stream	Detect if the bloodstream after sticking is sufficient to safeguard a rapid death
Signs of life / consciousness	Detect movements of pigs while hanging at the rail, that might indicate a sign of life or consciousness, e.g., lifting the head, kicking of the leg, arching of back, gasping for air
Automatic rail stop	Ability to integrate AI4A to automatically stop the slaughter line if the camera detects signs of life/consciousness
General	
Counting	Count the number of pigs to identify the percentage of handling issues per total number of pigs
Blurring	Blurring of persons and/or faces real time, to safeguard privacy
Real time notification	Real time notifications whenever a time critical handling issue occurs. This can be done for example through sound or light signals
Best in class comparison	Comparing the animal handling performance of slaughterhouses within one company
Sector benchmark	Comparing the animal handling performance of slaughterhouses across the slaughter sector, anonymously if required
Optional add-ons	
Use of an unknown device	Detect of the use of an unknown device to drive the pigs
Kicking / hitting / dragging	Identify kicking, hitting or dragging a pig
Audio analytics	Detect stress calls and overall pig noise levels. *Module is in development*
Thermographic analysis	Use of thermographic cameras to detect wounds, infections and heat related issues. *Module is in development.*
Link to transport	Link handling number/percentage of handling issues to specific transporters and farms. *Module is in development*.

AI4Animals modules for cows

Offloading phase	
No / minimal movement	Lack of or minimal cow movement for a certain time duration compared to the rest of the herd, indicating dead on arrival or (severe) lameness
Downer cow	Detect a laying cow, indication lameness or other welfare issues
Slips and falls	Detect a slip or fall from a cow, indication lameness or other welfare issues
Emergency stunner use	The use of the emergency stunner after unloading the cow due to (severe) lameness or other welfare issues
Stressful human behavior	Detect a person walking into the group of cows, obstructing the flow / walkway of the cow
Crowding	A certain group size of cows in very close proximity to each other, not moving for a certain duration indicating crowding
Lairage phase	
Use of electric prod	Detect the use of the electric prod on a cow, including frequency
Emergency stunner use	The use of the emergency stunner after unloading the animal due to (severe) lameness or other welfare issues
Use of paddle	Detect the use of paddles, touching or hitting cows
Driving phase	
Use of electric prod	Detect the use of the electric prod on a cow
Use of paddle	Detect the use of paddles, touching or hitting the cows
Tail twisting	Twisting the tail to drive the cow forward
Stunning phase	
Stunning box	Measuring the duration of the cow in the stunning box indicating issues
Stun – stick interval	Measure the time interval between the stunning and the sticking of the cow
Cornea reflex after stunning	Monitor eye activity that indicates a cornea reflex
Debleeding phase	
Cut placement	Detect whether a cut has been made to bleed the cow
Blood stream	Detect if the bloodstream after sticking is sufficient to secure a rapid death
Signs of life / consciousness	Detect movements of cows that might indicate a sign of life or consciousness, e.g., lifting the head, kicking of the leg, arching of back, gasping
Automatic rail stop	Ability to integrate AI4A to automatically stop the slaughter line if the camera detects signs of life/consciousness
General	
Counting	Count the number of cows to identify the percentage of handling issues per total number of cows
Blurring	Blurring of persons or faces real time, to safeguard privacy
Real time notification	Real time notifications whenever a time critical handling issue occurs. This can be done for example through sound or light
Best in class	Comparing the animal handling performance of slaughterhouses within one company
Sector benchmark	Comparing the animal handling performance of slaughterhouses across the slaughter sector
Other modules	
Use of an unknown device	Detect of the use of an unknow device to drive the cow
Kicking / hitting / dragging	Identify kicking, hitting or dragging a cow
Audio analytics	Detect stress calls and overall cow noise levels. *Module is in development*
Thermographic analysis	Use of thermographic cameras to detect wounds, infections and heat related issues. *Module is in development.*
Link to transport	Link handling number/percentage of handling issues to specific transporters and farms. *Module is in development*.