BlinkAI (Nuna Solutions): Automated monitoring of corneal reflex after CO_2 stunning in pigs

aWISH
ANIMAL WELFARE INDICATORS AT THE SLAUGHTERHOUSE

Assessing stunning effectiveness in pigs at slaughter is essential for animal welfare and is traditionally based on observations performed by trained personnel.

BlinkAI was developed within the aWISH project to support this assessment through automated and continuous monitoring under commercial slaughterhouse conditions. The system analyses short video sequences of the eye area after a controlled air stimulus to identify an ocular response compatible with the corneal reflex.

BlinkAI combines computer vision and temporal image analysis to monitor the eye response of individual pigs after CO_2 stunning. A camera records the animal while a controlled air puff is directed towards the corneal area. The system automatically localises and tracks the relevant anatomical eye regions and analyses their temporal response to determine whether a blink-compatible reaction is detected.

The technology has been developed and tested under real commercial slaughterhouse conditions within the aWISH project. These trials have also highlighted the importance of appropriate camera positioning, stable image quality, clean protective surfaces, controlled air delivery and robust tracking in an industrial environment.

BlinkAI is intended as an objective monitoring tool to complement existing animal-welfare assessment procedures and support more continuous, data-driven evaluation of stunning effectiveness.

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Fig.1 – BlinkAI installation

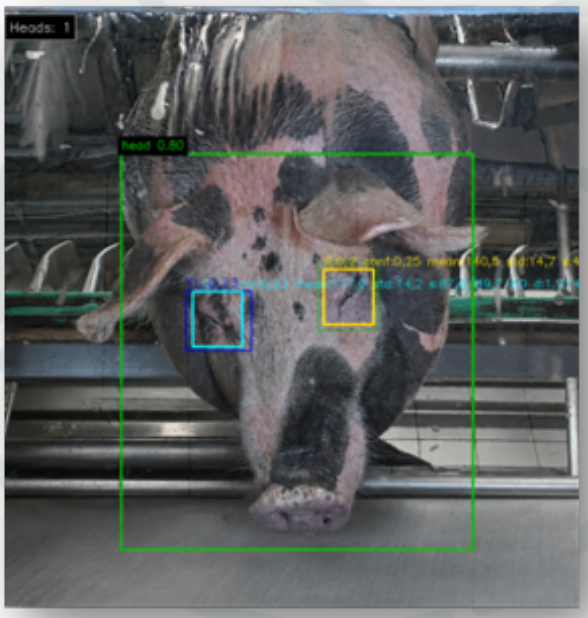


Fig.2 - Computer vision analysis

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