

Kolloquium „Statistische Methoden in der empirischen Forschung“

Wann: 20. November 2018, 17:00 – 18:30 Uhr

Wo: Robert Koch-Institut | Nordufer 20 | 13353 Berlin (Wedding),
S41, S42, U9 Westhafen | U9, Bus 142 Amrumer Str

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Animal emotion recognition via deep learning

Evaluating the severity of an experiment or medical procedure on a laboratory animal is hindered due to the animal's inability to communicate. A variety of behavioral and physiological measures are employed to get an accurate picture of the animal's well-being. In the case of laboratory mice one such measure is the Mouse Grimace Scale (MGS). It requires a trained expert to examine a mouse's facial features for pain indicators. The human expert has to do this blindly, so a separate experimenter has to carefully acquire images of the mouse in the state to be investigated and of control mice. We aim to automate parts of this process using Computer Vision techniques, namely Convolutional Neural Networks. Their successes in almost all of Computer Vision tasks indicate that human performance could be reached in this application. We demonstrate the results of deploying the State of the art Deep Convolutional Neural Networks which were trained on our own unique dataset of black mice (C57BL/6JRj) obtained in manual well-being evaluation experiments in natural laboratory environment [1].

Hohlbaum, K., Bert, B., Dietze, S., Palme, R., Fink, H., & Thöne-Reineke, C. (2018). Impact of repeated anesthesia with ketamine and xylazine on the well-being of C57BL/6JRj mice. *PloS one*, 13(9), e0203559.