Part-time research position for a master's student in computer science (incl. adjacent fields)

Topic: Automated measurement of bird breath rate from mobile phone videos to quantify stress in the wild great tit

Keywords: computer vision; image segmentation; animal welfare

Location: University of Vienna, Department of Behavioural & Cognitive Biology

Supervisors: Dr. Yseult Héjja-Brichard and Mag.a Caroline Deimel
-- administrative supervision: Prof. Leonida Fusani.

Context and objective
Quantifying capture and handling stress in birds requires standardised, species-specific severity assessment parameters. Breath rate (BR) is increasingly used as a non-invasive proxy of stress that is fast, cheap, and field-friendly. To quantify BR, the bird is restrained in one hand and an observer counts chest movements visually and/or by palpation for a given time-unit. However, the high observer-dependency of this scoring system and the heterogeneity of counting protocols make comparisons across studies very difficult.
A solution to this problem is to develop and validate a tool for providing an objective breath rate of handled birds that could be adopted by any person conducting field work.

The objective of this internship will be to leverage the many videos of handled wild great tits that the team has collected over several years to develop an automation tool that estimates BR from mobile phone videos with high accuracy and precision, compared to manually BR counts that will be provided with the video dataset.
The student will contribute to
   - Automate the segmentation of the bird chest area from videos of handled birds
   - Count the number of breath rate for different time durations
   - Compute several metrics of interest

Required skills: Strong proficiency with Python and computer vision libraries. Please provide a link to your GitHub/GitLab or to any evidence of proficiency.

Start of the internship: between December 2025 and February 2026
Duration: ≤ 6 months, weekly hours negotiable (contract type: *geringfügige Beschäftigung*)

Interested candidates should send their CV and cover letter to:
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