



Universität Stuttgart

Fakultät 6: Luft- und Raumfahrttechnik und Geodäsie



SCIENCE

Öffentlicher Vortrag

(Präsenz oder online, in Englisch)

Intelligent Aerial Robots

Antrittsvorlesung von
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KOLLOQUIUM DER LUFT- UND RAUMFAHRTECHNIK UND GEODÄSIE

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Pfaffenwaldring 27, V27.02

Biodiversity monitoring over huge spatio-temporal scales to empirically quantify the impact of climate change, search-and-rescue due to natural disasters in hard to reach locations, and large-scale sustainable agriculture to meet the needs of the world's growing human population, are some of the most pertinent societal problems today. The spatial and temporal scales combined with different levels of resolution required to address these challenges make them particularly difficult. For example, position trajectories of large animals need to be monitored over hundreds of kilometers and for several weeks or months to understand their migratory patterns. Low-resolution position estimates of the animals will suffice for this purpose. However, to understand an individual animal's behavior, a high-resolution estimate of the animal's skeletal pose is required. Similarly, a high-resolution estimate of a human's posture is necessary for quick and efficient decision-making in a search-and-rescue scenario.

In this talk, I will elaborate on how our research on intelligent aerial robots aims to address such challenges. I will discuss how vision-based active perception in multi-robot systems, especially in aerial systems, is key to these problems. In particular, first, I will present novel methods based on both classical and deep-learning approaches for human and animal pose estimation from a team of autonomous aerial robots. Second, I will discuss the novel aerial robots we have developed to address further practical and logistic challenges involved in real-world deployment. Third, I will describe our ongoing, large-scale, animal conservation-related projects where aerial robotics plays a central role. Finally, I will highlight our real-world experiments and demonstration, which is a key metric of evaluating research in robotics.



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- Eine Veranstaltung der Fakultät 6 und der DGLR-Bezirksgruppe Stuttgart
- Nach dem Vortrag wird zu Imbiss, Umtrunk und Diskussion geladen
- Weitere Infos, Live-Stream und Veranstaltungen unter:
<https://www.f06.uni-stuttgart.de/veranstaltungen>

