



## IDP - Fully Autonomous Flight

At the Chair of Autonomous Aerial Systems, we are pioneering the frontier of aerial robotics. Our research team is dedicated to advancing the capabilities of aerial platforms, enabling them to autonomously navigate through unknown, dynamic, and potentially cluttered spaces. Our research focuses on developing innovative algorithms that integrate machine learning, control theory, and computer vision. This interdisciplinary approach enables our drones to operate autonomously in confined spaces, relying exclusively on onboard sensors for navigation and localization, pushing the boundaries of what's possible in autonomous aerial flight.

Currently, we are gearing up for the [Fully Autonomous Flight Challenge](#), a competition launched by the German Federal Agency for Disruptive Innovation (SPRIN-D) to advance unmanned aerial vehicle (UAV) technology. Our goal is to showcase a lightweight drone, capable of navigating a complex course autonomously, without human intervention, and under adverse conditions. This challenge requires advanced capabilities to ensure the safe operation of autonomous systems amidst environmental and other unforeseen disturbances and sets the stage for the future of transportation and drone technology. Our partners are Airbus, the Fraunhofer Institute, and the Horyzn student initiative.

We are looking for computer science students passionate about AI, robotics, and autonomous systems to complement our team. Programming skills in C/C++ and Python are essential, as are intrinsic motivation and self-reliance. Strong debugging skills on embedded systems are paramount.

(please send a short informal description of your experience, interest & previous projects)

### Contact

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Chair of Autonomous Aerial Systems

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