Johann Lange

Curriculum vitæ

Objective

Multidisciplinary robotics engineer with additional expertise in aircraft systems, (autonomous) flight control, and machine learning. Proven problem-solving skills and the ability to familiarize oneself quickly with new topics and tasks.

Course of Education

10/16 – 09/19 **Aircraft Systems Engineering, M.Sc.**, *Hamburg University of Technology*, Hamburg, Germany.
Pursuing a Master's degree in Aircraft Systems Engineering focusing on Aircraft Systems, and moreover specializing on Control Systems, Robotics and Machine Learning.

11/18 – 04/19 **Visiting Research Scholar**, *University of California, Berkeley*, Berkeley (CA), United States.
Researcher in the "Hybrid Robotics" Lab of Asst. Prof. Koushil Sreenath. Working on autonomous flight control of aerial quadrotors. Focusing on developing and implementing novice obstacle avoidance technology for enhancent path planning.

Educational and work experience

10/19 – today **Systems Engineer for automation and robotics**, *ZAL Center of Applied Aeronautical Research*, Hamburg, Germany.
Working on research and development for research projects as well as contract research and support of industrial customers. Focus on (simulated) robotic systems in hard- and software. Managing work packages of governmental funded research projects and representing them at conferences. Furthermore administrator of the in-house robotic simulation server as well as the GitLab server.

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12/16 – 06/18 **Working Student**, *"Cabin Supply Modules A350" – Airbus*, Hamburg, Germany.
Primarily worked as Project Management support for R&D projects concerning new developments within the cabin focusing on Galleys. Especially managing a project which aimed to develop a replacement for the state-of-the-art honeycomb panels. Thus, operated as the focal point for the management, subcontractors, and different divisions across Airbus all working on the project. Therefore, bore the responsibility for multiple deliverables within different projects. Lastly, finished the project by passing TRL 6, hence, allowing Entry-into-Service.

09/16 – 01/18 **Teamleader**, *HAMBURG – a REXUS/BEXUS project, German Aerospace Center, and European Space Agency*, Hamburg, Germany; Bremen, Germany; Kiruna, Sweden.
Led a student experiment for a REXUS/BEXUS project, a German-Swedish student programme in cooperation with DLR and ESA. Been responsible for the entire project, but mostly focused on hard- and software development. Moreover, built the experiment and performed different functional and performance tests afterward. Finally, led and managed a trip to Kiruna, Sweden, on which the experiment was again fully tested and mounted to a balloon, reaching an altitude of 25 000 m.

01/16 – 04/16 **Bachelor's Thesis: Development and Control of a Dive Cell**, *Institute of Mechanics and Ocean Engineering (M-13, MuM), Hamburg University of Technology*, Hamburg, Germany.
Designed as well as built an autonomous diving cell as a proof of concept of isobaric stabilization. The diving cell is built around an actuator which was used to change the volume and therefore the buoyancy. Furthermore, for the control laws, investigated different options and finally settled on a PID-controller as a simple solution and a Sliding-Mode-controller as a more advanced solution for comparison. Upon finishing the thesis, published the results in [1].

Qualification

Languages skills

German Native.

English Fluent, C1.

Computer skills

CAD **Catia, Inventor, SolidEdge, SolidWorks.**

Calculation **Maple, MATLAB, Simulink.**

Programming **C, C++, git, Java, PX4, Python, ROS, TensorFlow.**

Other **CI/CD, GitLab.**

Publications

[1] Wallace M. Bessa, Edwin Kreuzer, Johann Lange, Marc-Andre Pick, and Eugen Solowjow. Design and Adaptive Depth Control of a Micro Diving Agent. *IEEE Robotics and Automation Letters & IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2(4):1871–1877, 2017. doi.org/10.1109/LRA.2017.2714142.

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