Johann Christensen

Curriculum vitæ

Objective

Multidisciplinary AI expert with a strong background in robotics with additional expertise in aircraft systems, and (autonomous) flight control. Pursuing my Ph.D. (Dr.-Ing.) in Reinforcement Learning for mechatronic systems at the Hamburg University of Technology. Proven problem-solving skills and the ability to familiarize oneself quickly with new topics and tasks.

Course of Education

02/21 – today **External Ph.D. candidat, Dr.-Ing.**, *Hamburg University of Technology*, Hamburg, Germany.
Research in the field of reinforcement learning for mechatronic systems.

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 **Development 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 reinforcement learning and (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.

+49 175 6701440 • johannchristensen@outlook.de • www.chrstnsn.de
johannchristensen • juhannc • juhannc • 0000-0001-9871-122X

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. 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.

01/16 – 04/16 **Bachelor's Thesis: Development and Control of a Dive Cell**, *Institute of Mechanics and Ocean Engineering, Hamburg University of Technology*, Hamburg, Germany.
Designed as well as built an autonomous diving cell as a proof of concept of isobaric stabilization. Upon finishing the thesis, published the results in [1].

Qualifications

	Skill	Level	*Comment*
Spoken:	German	■■■■■	*Native.*
	English	■■■■□	*Fluent, C1.*
Language:	Python	■■■■□	*Used for open-sources projects, machine learning and ROS.*
	MATLAB/Simulink	■■■□□	*Extensive knowledge through multiple projects.*
	C++	■■□□□	*Mostly for working with ROS and PX4 flight controllers.*
	Java	■□□□□	*Basic knowledge from my udergraduate studies.*
Frameworks:	ROS	■■■■□	*Used as the basis for all automation and robotics solutions.*
	PyTorch	■■■□□	*Preferred framework for machine learning solutions.*
	PX4	■■■□□	*Developed custom modules for different applications.*
	git	■■■□□	*Using git as the go-to solution for versioning in all my projects.*
	Keras/TensorFlow	■■□□□	*Used only where Keras/TensorFlow was already in use.*
	TensorRT	■■□□□	*Brining machine learning models to the edge.*
Other:	CAD	■■■□□	*Experienced with Inventor and SolidWorks.*
	CI/CD	■■■□□	*Based on GitLab's CI/CD pipelines.*

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.

Hamburg, Germany, August 29, 2022