Helge Eichhorn

Curriculum Vitae

Nelly-Sachs-Straße 23
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Personal Information

Date of Birth	19/12/1986
Nationality	German

Professional Experience

Technology Consultant – Artificial Intelligence & Data Analytics

3/2020 – present   Lufthansa Industry Solutions AS GmbH
- Data engineering, DevOps, and CI/CD consultancy
- Fuel efficiency analytics and data quality management at Deutsche Lufthansa AG

Head of Mission Operations

7/2018 – 2/2020   Planetary Transportation Systems GmbH (formerly PTScientists GmbH)
- Lead of the Mission Analysis & Flight Dynamics Team
- Architect and project manager for the ground segment
- Technical officer for operations support provided by ESOC

Software Engineer – Astrodynamics

2/2017 – 6/2018   Telespazio VEGA Deutschland GmbH
- Implementation of an attitude tool for ASI's PRISMA mission
- Evolution and maintenance of ESA's UMF (Universal Modelling Framework) for model-based development of operational simulators
- Validation of the EGS-CC Monitoring and Command Model kernel

Freelance Consultant in Mission Analysis

1/2014 – 10/2016   ESOC – European Space Operations Centre, European Space Agency
- Design and development of a new software infrastructure for lunar mission analysis
- Evaluation of modern programming languages for next-generation astrodynamics systems

Research Assistant in the Department of Computer Integrated Design (DiK)

11/2013 – 10/2016   Technische Universität Darmstadt
- Research in model-based engineering, data modelling, and computational science
- Benchmarking of LOTAR-compliant product data archiving systems for Airbus Group (2015-2016)
- DFG-funded research project *SCoPE – Smart Components within Smart Production Processes and Environments* (2014)

Internship and Master's Thesis in Mission Analysis

11/2012 – 10/2013   ESOC – European Space Operations Centre, European Space Agency
- Design and development of the FASTOP software tool for launcher ascent trajectory optimization
- Reconstruction of the Apollo 15 trajectory for the reevaluation of X-ray measurements

University Education

Doctor's Degree in "Mechanical Engineering" – Expected 2020

11/2013 – present   Technische Universität Darmstadt

Thesis – *Model-Based Space Mission Design (working title)*
Advisor: Prof. Dr.-Ing. Reiner Anderl

Master's Degree in "Mechanical and Process Engineering"

10/2011 – 10/2013   Technische Universität Darmstadt

21/10/2013   Master's Thesis – *Knowledge-Based Simulation Models for the Payload Assessment of Launch Systems*
Advisor: Prof. Dr.-Ing. Reiner Anderl

Bachelor's Degree in "Mechanical and Process Engineering"

10/2007 – 9/2011   Technische Universität Darmstadt

25/5/2011   Bachelor's Thesis – *Image Post-Processing of the Impact of Super-Cooled Drops*
Advisor: Prof. Dr.-Ing. Cameron Tropea

8/2008 – 10/2008   Stay abroad: Kunglia Tekniska Högskolan (KTH) Stockholm, Sweden

Civilian Service

10/2006 – 6/2007   Paramedic – DRK Rettungsdienst Rheinhessen-Nahe gGmbH, Mainz

Education

8/1997 – 3/2006   Rabanus-Maurus-Gymnasium, Mainz

1/2003 – 6/2003   Stay abroad: Belmont Secondary Highschool Victoria, B.C., Canada

Additional Qualifications

Language Skills

German   Native speaker
English   Fluent

Software Development

Expert   Julia, Python, MATLAB, Fortran
Intermediate   Java, C/C++, Bash

General IT

OS   Linux, macOS, Windows
other   LaTeX, Microsoft Office, LibreOffice

Relevant Publications

- Eichhorn, Helge; Steindorf, Lukas; Cano, Juan Luis: Astrodynamics.jl: A Julia-Based Open Source Framework for Orbital Mechanics. In: Proceedings of the 7th International Conference on Astrodynamics Tools and Techniques (ICATT 2018), Oberpfaffenhofen, Germany, 6-9 November, 2018.
- Eichhorn, Helge; Cano, Juan Luis; McLean, Frazer; Anderl, Reiner: A Comparative Study of Programming Languages for Next-Generation Astrodynamics Systems. In: CEAS Space Journal (2017). `https://doi.org/10.1007/s12567-017-0170-8`.
- Eichhorn, Helge; Anderl, Reiner: Plyades: A Python Library for Space Mission Design. In: Proceedings of the 8th European Conference on Python in Science (EuroSciPy 2015), Cambridge, United Kingdom, 28-29 August, 2015 (pp. 9-12).

Griesheim, May 20, 2020