Maximilian Pierzyna

born on 03.04.1996 in Georgsmarienhütte, Germany

Education

08/2020 - 01/2021
ERASMUS+ Semester (on site), Kungliga Tekniska Högskolan (KTH), Stockholm, Sweden

- Focus: Space physics, reinforcement learning, and fluid mechanics modelling

10/2019 - present
M. Sc. in Aerospace Engineering, 2nd year, Technische Universität Braunschweig, Germany

- Focus: Space flight, aerodynamics, and mathematical and data-driven modelling

10/2015 - 09/2019
B. Sc. in Mechanical Engineering, Technische Universität Braunschweig, Germany

- Research project: "Uncertainty propagation for Relative Motion in Low Earth Orbit". Grade: A
- Bachelor thesis: "Prediction of Droplet Splashing Using Machine Learning Techniques". Grade: A
- Overall grade: A

Professional Experience

11/2019 - present
Student Researcher in Machine Learning Modelling of Aerodynamical Problems,
Institute of Fluid Mechanics, TU Braunschweig

- Developed a data-driven classification model to predict droplet splashing under various impact conditions, based on rich existing experimental data
- Published resulting analytical machine learning model in Journal of Fluid Mechanics (under review)
- Contributing to development of a machine learning regression model predicting aerodynamical performance of various airfoils

04/2018 - 09/2018
Engineering Intern at Office of Airworthiness, Elbe Flugzeugwerke GmbH (EFW), Dresden

- Conceptualized, tested, and qualified carbon-fibre enhanced panels for Airbus aeroplanes
- Developed database to manage EFW's and Airbus's spare parts and their relations

04/2016 - 01/2020
System Administrator (Student Assistant), Coordinated Research Centre 880, TU Braunschweig

- Maintained and administered CRC 880's web server and research data platform
- Developed and maintained software supporting research and management of the CRC, such as tools for internal billing or tracking of projects' milestones
- Provided technical support for CRC 880 employees

05/2013 - present
Web Developer (voluntary), Verein ehemaliger Josephiner e.V. (josephinerverein.de), Hildesheim

- Design, development, and maintenance of website for high school's alumni association
- Developing tailored modules to manage communication and personal data of more than 2000 members

Publications

[1] Pierzyna, M., D. A. Burzynski, S. E. Bansmer, and R. Semaan. **"Data-driven splashing threshold model for drop impact on dry smooth surfaces."** Journal of Fluid Mechanics (under review).

Additional Skills

Languages

German:	Native speaker
English:	Proficient (C2)
Italian:	Elementary (A2)
Swedish:	Basics (A1)

IT Skills

- Engineering tools: CATIA V5, Autodesk Fusion 360, Microsoft Office incl. VBA
- Programming: Python, Javascript, C++, PHP, git, MATLAB, Wolfram Mathematica
- Machine learning and data science: Scikit-learn, PyTorch, Pandas, Jupyter
- Linux/UNIX: Desktop usage and server administration
- Image creation and manipulation: Adobe Photoshop, Illustrator, and InDesign

Interests and Hobbies

IT

- Programming tools for personal use, e.g. to analyse spending habits based on financial transactions
- Operating a Linux home server as a secure personal cloud storage

Electronics and Crafting

- Building different lighting solutions using LED stripes and Arduino micro controllers

Sailing and Wind Surfing

- Licenses in sailing, catamaran sailing, and wind surfing (VDWS)