

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” (Excellent)
- Bachelor thesis: “Prediction of Droplet Splashing Using Machine Learning Techniques” (Excellent)
- Overall grade: Excellent

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
- Co-authored journal paper to publish resulting model in Journal of Fluid Mechanics (under review)
- Contributing to development of a new 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
- Developed tailored modules to manage communication and personal data of more than 2000 members

International Experience

09/2014 - 05/2015

Working Holiday, Australia

- Worked for a total of five months at different farms in rural Australia, thereby financed the entire trip
- Improved my English skills to near-fluency and became more self-organized and independent

06/2012

Scientific Exchange, Krasnojarsk and Novosibirsk, Russia

- Observed and evaluated the astronomical event “Venus transit” with German and Russian students
- Explored Krasnojarsk and learned about Russian life and culture by living with a Russian host

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

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|--------------------------------------|----------------------------------------------------------------|
| - 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

Cooking

- Experimenting with dishes from different nationalities as well as classic German dishes

Outdoor Activities

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