

# MAXIMILIAN PIERZYNA

AEROSPACE ENGINEER, B.Sc.



## PROFILE

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🌐 maximilian-pierzyna.de

## IT SKILLS

### Programming

Python C++ Matlab  
bash SQL unit testing  
web app development git

### Engineering Tools

Microsoft Office CATIA V5  
Fusion 360 VBA

### Data Science

PyTorch scikit-learn  
bayesian optimization

### Miscellaneous

Photo editing Inkscape  
Latex Slack Docker  
Linux server

## EDUCATION

### M.Sc. in Aerospace Engineering

10/2019 - 06/2022

Technische Universität Braunschweig, Braunschweig, Germany

- Focus: Mathematical and data-driven modelling of problems from aerodynamics and orbital mechanics
- Master thesis (in progress): "Characterisation of on-orbit fragmentation events based on TLE data"
- Research project: "Control-oriented cluster-based network modelling"
- Current grade: 1.2\*

### B.Sc. in Mechanical Engineering (Grade 1.4\*)

10/2015 - 09/2019

Technische Universität Braunschweig, Braunschweig, Germany

- Bachelor thesis: "Prediction of droplet splashing using machine learning techniques"

## EXPERIENCE

### Student Researcher in Machine Learning Modelling of Aerodynamical Problems

11/2019 - present

Institute of Fluid Mechanics, TU Braunschweig

- Developed a data-driven classification model to predict the splashing behaviour of liquid droplets impacting on solid dry surfaces
- Co-authored a journal paper to publish the drop impact model in AIP Physics of Fluids which enhanced my research-oriented working skills, such as scientific collaboration and academic writing
- Contributed to the development of a new machine learning model to predict aerodynamical performance based on a large airfoil database

### System Administrator

04/2016 - 01/2020

Coordinated Research Centre 880 (CRC 880), TU Braunschweig

- Maintained and administered the research centre's Linux server and research data platform as part of the management team
- Developed and maintained software supporting researchers and management, such as tools for internal billing or tracking of project milestones
- Involved in the strategic planning and development of the IT infrastructure

## LANGUAGE SKILLS

German (Native language)

English (C2)

Italian (A2)

Swedish (A1)

## INTERESTS

### Cooking

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

### Outdoor Activities

- Holder of windsurfing and sailing licenses
- Ice skating in winter, inline skating in summer

### Travelling

- Exploring different countries, their food, and their culture on my own or with friends
- moving around, preferably, by coach or train

## EXPERIENCE (CONTINUED)

**Engineering Intern at Office of Airworthiness** 04/2018 - 09/2018

Elbe Flugzeugwerke GmbH (EFW), Dresden

- Prepared, executed, and documented qualification tests and certification tests of carbon-fibre enhanced panels for Airbus aircraft
- Developed a database to manage and analyse multiple versions of spare parts and their relations to the original parts

## VOLUNTARY WORK

**IT Manager and Regional Coordinator** 03/2021 - present

Erasmus Student Network (ESN) Braunschweig e.V.

- Organising events and trips for 30 to 60 international students to bring them into contact with other students and to show them around the city and the region
- Responsible for maintaining and enhancing the internal IT systems, such as a webshop, document storage, and task management
- Coordinating and encouraging visits and joint projects (e.g. joint video Advent calendar) between Braunschweig and eight other ESN cities in Northern Germany

**Web Developer** 05/2013 - present

Verein ehemaliger Josephiner e.V., Hildesheim, Germany

- Design, development, and maintenance of website for high school's alumni association in close contact with the association's board
- Developed tailored software to manage communication and personal data of more than 2000 alumni

## INTERNATIONAL EXPERIENCE

**ERASMUS+ Student** 08/2020 - 01/2021

Kungliga Tekniska Högskolan (KTH), Stockholm, Sweden

- Focus: Space physics, reinforcement learning, wind energy aerodynamics, fluid mechanics modelling

**Working Holiday** 09/2014 - 05/2015

Australia

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

## PUBLICATIONS

- Pierzyna, M., Burzynski, D. A., Bansmer, S. E., & Semaan, R. (2021). Data-driven splashing threshold model for drop impact on dry smooth surfaces. *Physics of Fluids*, 33(12), 123317.