

# Simon Bauer

AEROSPACE ENGINEERING PHD STUDENT  
Washington DC, USA

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## Education

### University of Maryland

PhD in Aerospace Engineering

- Part of Prof. John Martin's Machine Learning for Dynamical Systems group

College Park, USA

Jan 2026 - Today

### ISAE-SUPAERO

M.Sc. in Aerospace Engineering

- **Space Systems Major**
- Research Project: Spacecraft maneuver design under uncertainty in the Saturn-Enceladus system

Toulouse, FR

Sept 2023 - Sept 2025

### ETH Zurich

B.Sc. in Mechanical Engineering

- Specialization in **Design, Mechanics and Materials**
- **Elective Courses:** Computational Mechanics I and II (Linear and Non-linear FEA), Light Structures, Structures Lab, Materials for Engineers, Continuum Mechanics I, Control Systems II, System Modelling, MAD (Models, Algorithms and Data), Manufacturing Engineering

Zurich, CH

Sept 2019 - June 2023

### AHS Kollegium Kalksburg

High School

- Graduated with Distinction
- High school thesis "Physics of Paperplanes": 2nd Place at "Hans Riegel Fachpreis" in Physics, 2nd Place at "Luftfahrtspreis" from FH Joanneum
- Took part in Erasmus+ research project about the production of biogas out of agricultural waste

Vienna, AT

2010 - 2018

## Research Experience

### Graduate Research Assistant

University of Maryland

- Using Machine Learning to predict sub-cm debris particles through the corresponding soliton wave characteristics

College Park, USA

Jan 2026 - Today

### Master Thesis

University of Maryland

- Master Thesis in Prof. John Martin's Machine Learning for Dynamical Systems group
- Uncertainty Quantification of Physics-Informed Neural Network Gravity Models
- Online creation of global uncertainty maps around small bodies using conformal prediction and an extended Kalman filter pipeline

College Park, USA

April 2025 - Sept 2025

### Research Project

ISAE-SUPAERO

- Spacecraft maneuver design under uncertainty in the Saturn-Enceladus system
- Maneuver optimization modeling state uncertainties with Gaussian mixtures and incorporating reinforcement learning

Toulouse, FR

Jan 2024 - March 2025

### Bachelor Thesis

ETH Zurich

- Bachelor Thesis in Prof. Paolo Ermanni's Composite Materials and Adaptive Structures group
- Investigation of failure mechanisms of thin-ply carbon fiber thermoplastic angle-ply laminates

Zurich, CH

Feb 2023 - June 2023

### Light Structures Lab

ETH Zurich

- Design, development, manufacturing and testing of a composite material wing spar in a group of 3 students

Zurich, CH

Sept 2022 - Dec 2022

## Work Experience

### ARIS

Structural Engineer & Coach

- Project Nautilus - an UUV to explore Enceladus' icy oceans
- Development of the Buoyancy Control Unit
- Coached the structures team, providing technical guidance and supporting team development and problem-solving

Zurich, CH

May 2022 - June 2023

### Pankl Racing Systems

Intern

- Experiencing different metalworking techniques on parts for high-tech applications such as: Formula 1, Hypercars

Kapfenberg, AT

Jan 2020 - Feb 2020

## Skills / Interests

### Technical Skills

Python, Machine Learning with PyTorch and Stable Baselines 3, Matlab,  $\LaTeX$  (Overleaf), Microsoft Office

### Soft Skills

Time Management, Teamwork, Problem-solving, Product Development, Creativity

### Interests

Rowing, Mountaineering, Running, Photography, Motorcycle, Cooking

## Languages

**German:** Native proficiency

**English:** C1

**French:** A2

**Spanish:** A2