

## EDUCATION

### RWTH AACHEN UNIVERSITY

DR.-ING. (PHD)

INSTITUTE FOR DATA SCIENCE IN  
MECHANICAL ENGINEERING

Expected Mar 2027 | Germany

Supervisor: Prof. Dr. Sebastian Trimpe

Associated Researcher at RTG UnRAVeL

### M.Sc. AUTOMATION ENGINEERING

Dec 2021 | Germany

GPA: 1.1/1.0 (with distinction)

Top 5% | Dean's List

### B.Sc. MECHANICAL ENGINEERING

Mar 2019 | Germany

GPA: 2.2/1.0

### UNIVERSITY OF CAMBRIDGE

ELLIS SUMMER SCHOOL

Jul 2023 | UK

Probabilistic Machine Learning

### GYMNASIUM KRONSHAGEN




ABITUR

Jun 2015 | Germany

GPA: 1.9/1.0

DPG-Abitur Award (Physics)

## LINKS

 GitHub:// [brunzema](https://github.com/brunzema)  
 LinkedIn:// [paul-brunzema](https://www.linkedin.com/in/paul-brunzema)  
 Scholar:// [Paul Brunzema](https://scholar.google.com/citations?user=PaulBrunzema)

## SKILLS

### PROGRAMMING

Python (JAX, PyTorch, NumPy, ...)

Matlab • Shell • Git • ROS2

LaTeX • Simulink

### LANGUAGES

German (native)

English (fluent)

## INTERESTS & HOBBIES

Member of a democratic party in Germany

Support stem cell donor registration

Supervised F1-in-Schools team

### Hobbies:

Chess • American football

CrossFit • Cycling • Board games

Hiking through beautiful nature

My research lies at the intersection of **uncertainty quantification** (Gaussian processes, Bayesian neural networks) and **sequential decision-making** (Bayesian optimization, control, reinforcement learning). I aim to create agents and algorithms that efficiently and optimally act in uncertain and potentially changing environments.

## EXPERIENCE

### RWTH AACHEN UNIVERSITY | DOCTORAL RESEARCHER

03/01/2022 – 03/30/2027 (expected) | Theaterstr. 35-39, Aachen, Germany

- Research on (time-varying) Bayesian optimization and event-triggered learning
- Created MOOC on [Reinforcement Learning](#) (edX platform); in 2025, the course reached over 600 students across 83 countries.

### META | RESEARCH SCIENTIST INTERN

05/18/2026 – 09/04/2026 | 770 Broadway, New York, NY

- Bayesian optimization & AutoML

### TOYOTA RESEARCH INSTITUTE | RESEARCH SCIENTIST INTERN

06/23/2025 – 09/11/2025 | 4440 El Camino Real, Los Altos, CA

- Learning-based control for autonomous racing

### RWTH AACHEN UNIVERSITY | TEACHING & GRADUATE ASSISTANT

05/01/2019 – 03/30/2022 | Templergraben 55, Aachen, Germany

- Assisted approx. 700 students in *Tutorial Control Engineering*
- Research on nonlinear model predictive control for fuel cell hybrid vehicles

### PORSCHE ENGINEERING SERVICES | INTERN

10/01/2018 – 03/30/2019 | Etzelstr. 1, Bietigheim-Bissingen, Germany

## AWARDS & HONORS

2023 **SEW-EURODRIVE Student Award**

Best Master's thesis, Faculty of Mechanical Engineering

2021-22 **Dean's List** (Top 5% in course of study)

2021 **MathWorks Fellowship** for Graduate Students

2021 **Germany Scholarship** by the RWTH Education Fund

2015 **DPG-Abitur Award** (Physics)

## SELECTED PUBLICATIONS

**Brunzema, P.**, et al. (2025). "Bayesian Optimization via Continual Variational Last Layer Training." *International Conference on Learning Representations (ICLR)*. **Spotlight**.

**Brunzema, P.**, & Trimpe, S. (2025). "BayeSQP: Bayesian optimization through sequential quadratic programming." *Neural Information Processing Systems (NeurIPS)*. **Spotlight**.

**Brunzema, P.**, et al. (2025). "Event-Triggered Time-Varying Bayesian Optimization." *Transactions on Machine Learning Research (TMLR)*.

Holzapfel, A.\*, **Brunzema, P.\***, Trimpe, S. (2024). "Event-Triggered Safe Bayesian Optimization on Quadcopters." *Learning for Dynamics and Control (L4DC)*.

**Brunzema, P.\***, Kruse, P.\*, Trimpe, S. (2024). "Neural Processes with Event Triggers for Fast Adaptation." *Learning for Dynamics and Control (L4DC)*.

**Brunzema, P.**, et al. (2022). "On controller tuning with time-varying Bayesian optimization." *Conference on Decision and Control (CDC)*.

\*Equal contribution

Full publication list at [Google Scholar](#)

Reviewing for: AAAI, NeurIPS, ICLR, ECML, CDC, ACC, L4DC;

Journals: L-CSS, TCST, RA-L, Automatica