

# LUIS ALFRED BACKHAUS

## PROFESSIONAL EXPERIENCE



Luis Backhaus

\* 11.10.2001 in Tokio, Japan

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## AWARDS

### VfS Abiturpreis 2019

- excellent performance in the field of economics

### Cambridge Advanced C1

- Proof of high level English

### Jugend Forscht Competition

- 1st Place Rhein-Main Jugend Forscht

## SKILLS

### Programming

- C / Java / MATLAB / Terminal / Simulink

### CAD / 3D Printing

- Fusion360 / Solidworks / Cura / Ultimaker

### Microcontrollers

- Arduino / RaspberryPi / LabVIEW

## LANGUAGES

### German - Native

### English - Native

### French - Intermediate

### Spanish - Basics

## HOBBIES

- Music Production, Audio Engineering
- Sailing, Tennis, Volleyball

### Airbus Defence and Space - Working Student

SEPTEMBER 2023 - APRIL 2025

- ISO 5 working experience with optical spaceflight instruments, working with multi billion dollar equipment
- International experience abroad testing satellite instruments
- Working on European weather and quantum technology satellites
- Working student team lead

### Quantum Diamonds - Research Internship

NOVEMBER 2022 - MARCH 2023

- Designed and built a flagship demonstration model showcasing the core quantum effects of Quantum Diamonds' product.
- Created, soldered and tested a fully functional circuit with high voltage parts. Printed core support structures with a resin 3D-printer.

### BMW Group - Internship

OCTOBER 2020 - APRIL 2021

- 6 month internship in the vehicle dynamics division. (Synchro / Committee Management). Worked with the leadership division of the vehicle dynamics sector, interconnecting engineering and process management.
- Key takeaways: mapping out processes, identifying bottlenecks, implementing improvements, and monitoring the effectiveness of those changes over time.

### Günther Spelsberg GmbH - Internship

AUGUST 2019 - OCTOBER 2019

- Compulsory internship for the admission of the study program Engineering Science at TUM.
- Internship the mechanical engineering division: Acquired skills in molding, forming, machining, joining/separation, assembly, quality control. In addition exposure to lab equipment, safety protocols and research methodologies.

## EDUCATION

### Stanford University - Visiting Student Researcher

APRIL 2025 - PRESENT

- Research at Stanfords Structure and Composites Laboratory (SACL) under guidance of Prof. Chang

### Technical University of Munich (TUM) - Aerospace (M. Sc.)

OCTOBER 2024 - PRESENT

- Hybrid (German / English) engineering program, 120 ECTS:
- Focus: Aircraft Performance, Human Spaceflight

### Technical University of Munich (TUM) - Engineering Science (B. Sc.)

OCTOBER 2020 - OCTOBER 2024

- 210 ECTS interdisciplinary elite engineering program covering various aspects of engineering, natural sciences and computer science, taught bilingual (Englisch / German)
- Bachelor's Thesis at the Professorship of Lunar and Planetary Exploration - GPA: 3.7

### British School Manila - Student Exchange

OCTOBER 2016 - NOVEMBER 2016

- Student exchange in Manila / Philippines, with the British School Manila as the first exchange student from Germany.  
Focus on physics and sports.

### Kaiserin-Friedrich-Gymnasium - German Abitur („A - Levels“)

JANUARY 2011 - AUGUST 2019

- G8 bilingual classes in German / English, focused on physics and geography.
- Honored with the VfS-Abiturpreis from the Joachim Herz Stiftung as the only student of class of 2019. Prize for outstanding performance + initiative in economics.

## VOLUNTEER EXPERIENCE

### WARR - Structural Engineering MOVE-III satellite

MAY 2024 - OCTOBER 2024

- WARR is a Scientific Workgroup for Rocketry and Spaceflight at TUM. Mechanical + Structural Engineering for the MOVE-III satellite.
- Worked 20h/week on the structure of the CubeSat, ensuring a professional enclosure.
- Leveraging experience from Airbus Defence and Space for a seamless workflow + sharing knowledge to student teams. Sharing expertise + gaining insights.

### Interact Club Bad Homburg - Team Lead Environment

JANUARY 2018 - AUGUST 2019

- The Interact Club is a service club for young people ages 12 to 18 who want to join together to tackle the issues in their community that they care about.
- Sponsored by Rotary Club Bad Homburg v.d.H and providing opportunities for young people to develop leadership skills while making a positive impact through service projects.
- Key Projects: Garbage Cleanup in the city, sustainable bee homes

### Kaiserin-Friedrich-Gymnasium - Traffic Coordinator

MARCH 2016 - JANUARY 2018

- Due to accidents happening between students and cars the school introduced traffic coordination to tackle this problem. Joined the first traffic coordination team, reducing the car accidents at school to zero.

## PROJECTS

### Airbus Fly Your Ideas Competition - Drone Pre Flight Check

JULY 2024

- Winner of the global [Airbus Fly Your Ideas Competition](#) 2024 with the idea „Drone Pre Flight Check“
- Idea: Drones doing a Pre Flight Check before aircraft departure to optically check for fatigue damage

### Jugend Forscht - Intelligent Traffic System

2019

- Winning the 1st Prize of the Rhein-Main Jugend Forscht competition, leveraging my team to the Landesweite competition.
- Idea: Intelligent Traffic System - a system indicating a driver when he finds himself in a "green wave" of traffic lights.

### Entrepreneurs of Tomorrow X - Intelligent Gateway

2018

- Finalist in the Entrepreneurs of Tomorrow X business plan competition sponsored by the American-German Business Club.
- Idea: Intelligent Gateway - a gateway at supermarket checkouts where customers can simply walk through, effortlessly scanning all their groceries without the need to unload them onto a conveyor belt.

