

# Albéric de Lajarte

## Robotics engineer

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Palo Alto, California

(650) 382 8314



## Experiences:

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### Professional:

**Rouskin Lab – Harvard Medical School:** Dec. 2022 – today

Fixed term: Research associate

- Leading a team of 4 researchers on a new deep learning based method for RNA structure prediction
- Development of a bioinformatic pipeline for processing sequencer data, with improved automatic testing

**LASA (Learning Algorithms and System Laboratory):**

Nov. 2021 – Nov. 2022

Fixed term: Research engineer

- Development of a fast MPC for online motion planning, reducing planning failures and collisions by 60%
- Advanced torque control of collaborative robots

**ClearSpace:** July 2021 – August 2021

Internship: Dark room equipment

- Distributed application to control test facility and equipment
- Sensor calibration, actuator control, distributed computing

**RUAG Space:** September 2020 - December 2020

Internship: Research for GlexSys (ESA project)

- Design and tradeoff of gas-liquid transfer technologies to recycle the oxygen of the International Space Station
- New lab setup for automatic ozone sterilization

**Gait Up:** July 2020 - August 2020

Freelance project: Calibration mechanism for IMU

- Design, manufacture, and control of a three axes mechanism to automatically calibrate IMUs
- Reduced calibration time by 6 and improved precision by 2 compared to the previous manual calibration

## Education:

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- **École Polytechnique Fédérale de Lausanne (EPFL):**  
Master in Robotic, minor in Space technologies  
(2018-2021)
- **École Polytechnique Fédérale de Lausanne (EPFL):**  
Bachelor in Microtechnic (2015-2018)
- **Lycée des Chartreux:** Baccalauréat Scientifique,  
with highest honors (2012-2015)

### Academic:

**Control Laboratory:** December 2020 - July 2021

Master thesis: GNC algorithms of a sounding rocket

- Optimal control and guidance using MPC, deployed on a sounding rocket and an electric drone
- Real time simulator based on ROS, with hardware and software in the loop capabilities

**EPFL Rocket team:** March 2018 - July 2021

Student project: Student developed sounding rocket

- *1<sup>st</sup> year:* Avionics team leader: Modular on-board computer used for navigation, control, and ground communication
- *2<sup>nd</sup> year:* System engineer: Leading the teams Avionics, Recovery, Simulation and Ground segment (100+ students) for a new rocket with hybrid propulsion
- *3<sup>rd</sup> year:* Project Manager: started new project on active stabilization and guidance of the rocket, published to ICRA 2021

## Skills:

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### Systems and control

- Optimal control (MPC, LQR), model-based control
- Sensor fusion, extended Kalman filter
- System identification, signal processing
- Numerical simulation and optimization
- Deep learning, machine learning

### Programming and embedded systems:

- C/C++, Python, Matlab, Bash
- ROS, Linux, Git, Docker, Command line
- Electronic circuit and printed circuit board design

### Manufacture and design of 3D part:

- Fusion 360, CATIA
- CNC, 3D printing and conventional machining

### Miscellaneous:

- Microsoft Office (Excel, Word and PowerPoint)
- First aid training level 2 IAS
- Languages: French (native), English (fluent), Spanish (basic)