Florian Julé

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Work Experience

Joby Aviation — **Santa Cruz, CA**

Staff Mechanical Engineer – Special Projects, Flight Research — Nov 2023 – Feb 2025

- Designed and tested mechanical systems across novel aircraft programs within Joby's flight research division, including retractable landing gear, structural components, and system integration.

Tail and Effectors IPT Lead Engineer – S4-2.1 production aircraft — Oct 2018 – Nov 2023

- Led cross-functional teams in the development of tail, tilt nacelles, control surfaces, and propellers, advancing airframe designs towards FAA certification and production. 5 direct reports.
- Delivered the first production-prototype aircraft and conforming drawing package.
- Granted patent for the inboard nacelle tilt mechanism: Rotor assembly deployment mechanism.

Tilt Nacelles Lead Engineer – S4-2.0, pre-production aircraft — Oct 2017 – Oct 2018

- Designed, built, and tested the tilt nacelles for the Joby S4 pre-production aircraft.
- Served as flight test engineer throughout the flight test program.

Mechanical Engineer – S4-1.0, first full-scale eVTOL aircraft — Feb 2017 – Oct 2017

- Supported composites manufacturing and structural testing for the first Joby S4 full-scale prototype.

University of Michigan — **Ann Arbor, MI**

Research Assistant, Aerospace Materials Laboratory — Jan 2016 – Dec 2016

- Developed and tested a 3D printer for piezoelectric composites printing. Publication in ACS: Printed Nanocomposite Energy Harvesters with Controlled Alignment of Barium Titanate Nanowires, with M. H. Malakooti and H. A. Sodano.
- Investigated self-healing polymers for composites applications. Publication in Polymer: High service temperature, self-mendable thermosets networked by isocyanurate rings, with L. Zhang and H. A. Sodano.

Projects

Cooperative Payload Transport with a Drone Swarm — Jan – Mar 2026

- Formulated and solved an Optimal Control Problem (OCP) with CasADi to generate collision-free, dynamically feasible trajectories; deployed and validated on real hardware via ROS 2 and Crazyswarm2.

EKF SLAM on a TurtleBot3 — Jan – Mar 2026

- Built a full SLAM stack from scratch in C++/ROS 2: 2D geometry library, simulator, odometry, and Extended Kalman Filter SLAM with unknown data association using LIDAR landmark detection.

Object Manipulation with Franka Arm — Nov – Dec 2025

- Developed pick-and-place software for a Franka robotic arm using YOLO-based object detection; led computer vision and system integration on real hardware in a team of 4.

Education

Northwestern University — **Evanston, IL**

M.S. in Robotics — Sep 2025 – Sep 2026

University of Michigan — **Ann Arbor, MI**

M.S. in Aerospace Engineering — Sep 2015 – Dec 2016

Arts & Métiers ParisTech — **Metz/Paris, France**

B.S. in Mechanical & Industrial Engineering — Sep 2013 – Jun 2015

Skills

Robotics	Localization (EKF, UKF, Kalman Filters), SLAM, Motion Planning (RRT, A*), Computer Vision, Controls (PID, Feedforward)
Software	Python, C, C++, ROS 2, Git, Matlab
Mechanical	CAD (3D Experience, Onshape), FEA (Abaqus, Simulia), GD&T (ASME Y14.5)
Manufacturing	Composites (hand lay-up, AFP), Metals (CNC, 3D printing, sheet metal), Prototyping
Languages	French, English