

# Lennart Peus

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*Hardware-software integration engineer passionate about making electronics do meaningful things in the physical world.*

## EDUCATION

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<b>University of California, Berkeley</b>	Expected May 2026
Master of Engineering, Mechanical Engineering – <i>Focus: Robotics, Control Systems, Autonomous Systems</i>	
<b>University of Florida</b>	Fall 2024
Exchange Semester, Electrical & Computer Engineering	
<b>KU Leuven – Faculty of Engineering Technology</b>	July 2025
Bachelor of Science, Electronics & ICT Engineering Technology, <i>Cum Laude</i>	

## TECHNICAL SKILLS

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<b>Programming:</b>	Python, C++, C, Verilog, Java, MATLAB
<b>Embedded Systems:</b>	Microcontrollers, Firmware Development, RTOS Concepts, FPGA (PYNQ-Z2)
<b>Hardware Interfaces:</b>	SPI, I2C, UART, Ethernet, BLE, LTE/NFC
<b>Prototyping &amp; Test:</b>	PCB Design, Oscilloscope, Logic Analyzer, Wireshark, Matplotlib, Git, Linux
<b>Systems:</b>	ROS2, TCP/IP Networking, Sensor Integration, Actuator Control, JIRA

## ENGINEERING EXPERIENCE

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**Aerial Seeding System – UC Berkeley** Fall 2025 – Present  
*Wireless Systems & Deployment Lead*

- Leading wireless communication and sensing subsystems for a field-deployable aerial robotics platform within a 4-person cross-functional team.
- Architected embedded telemetry firmware using LoRa, achieving reliable ground-to-air communication at 1+ km range under real-world power and bandwidth constraints.
- Performed root cause analysis of signal degradation and timing faults using packet-level inspection; developed failure-detection mechanisms and system health monitoring logic.

- Wrote Python test automation and used Matplotlib to visualize signal performance data across test campaigns.

**Autonomous Manipulation Development – Innate & UC Berkeley** Fall 2025

- Integrated perception, motion planning, and low-level actuator control modules within a ROS2-based robotics system, working at the intersection of sensor input and physical output.
- Diagnosed hardware-software timing mismatches, sensor noise, and actuator faults through iterative log analysis and debugging in Linux environments.

**FPGA & Embedded Systems Projects – KU Leuven** 2023 – 2025

- Designed digital logic systems in Verilog on PYNQ-Z2 FPGA platforms; conducted hardware bring-up, signal validation, and electrical characterization using oscilloscopes and logic analyzers.
- Developed embedded IoT systems integrating BLE communication, custom PCB design, and sensor interfaces; performed board-level validation (SPI, I2C, UART) with documented test specifications.

**Smart Home System with AI Voice Assistant – KU Leuven** 2023 – 2024

- Designed a custom microphone PCB and integrated wireless sensor nodes across a custom subnet architecture; conducted packet inspection and network fault isolation using Wireshark.
- Coordinated hardware, firmware, and backend services into a cohesive end-to-end system.

**Full-Stack Portfolio Generator – KU Leuven** Spring 2025

- Designed and shipped a full-stack application end-to-end; authored integration test cases and led agile sprints with JIRA-tracked tasks to deliver a demo-ready product under schedule constraints.

## LEADERSHIP & RECOGNITION

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**Case Winner, HolyHack Belgium 2025** Leuven, Belgium

Led a team of 5 to first place out of roughly 20 competing teams, designing and demoing an AI-powered product under a 24-hour deadline.

**KU Leuven Student Ambassador & Delegate**

Selected as first-choice commencement speaker; delivered address to 200+ graduating students and represented the university in international collaborations, including engagements in China.