

Yunior Alcantara Guevara

CONTACT INFORMATION	Graduate Program in Electrical Engineering (PPGEEL) e-mail: yunior.alcantara@posgrad.ufsc.br Federal University of Santa Catarina (UFSC) lattes.cnpq.br/1109397288463274 Florianópolis, SC, Brazil orcid.org/0000-0002-0924-3151
PROFESSIONAL SUMMARY	Telecommunications Engineer with an M.Sc. in Electrical Engineering and a Ph.D. student, specialized in satellite communication. Experienced in electromagnetic simulation, hardware implementation, and prototype manufacturing for satellite projects.
RESEARCH INTERESTS	Embedded Systems for Space Communications, CubeSat Antennas and RF Engineering, Software-Defined Radio.
TECHNICAL SKILLS	<i>RF & Microwave:</i> Antenna Design, Software-Defined Radio. <i>Communications & DSP:</i> Signal Processing. <i>Hardware & Embedded:</i> PCB Design, FPGA, ARM/RISC-V based Microcontrollers. <i>Programming & HDL:</i> C/C++, Python, MATLAB, VHDL. <i>Simulation & Open Source Tools:</i> Ansys Electronics, KiCad, FreeCAD, LTspice, Qucs. <i>Lab Instrumentation:</i> Vector Network Analyzers, Spectrum Analyzers, Oscilloscopes. <i>Systems & Workflow:</i> Linux/Windows, Git/GitHub.
LANGUAGES	Portuguese: Proficient (C2). Spanish: Proficient (C2). English: Intermediate.
EDUCATION	Federal University of Santa Catarina (UFSC) , Florianópolis, Santa Catarina, Brazil <i>Ph.D. in Electrical Engineering</i> 2025 – present • Supervisor: Eduardo Augusto Bezerra • Major Field: Embedded Systems • Dissertation: “Embedded Platform for RF Communication in CubeSats” • CAPES scholarship (Academic Excellence Program, PROEX) <i>M.Sc. in Electrical Engineering</i> 2023 – 2025 • Supervisor: Eduardo Augusto Bezerra • Major Field: Embedded Systems • Thesis: “Deployable Wire Antenna Module for the FloripaSat-2 Platform” • Four-monopole turnstile antenna with thermally activated release and redundant control; vibration and thermal-vacuum qualification tests at LIT/INPE • CNPq scholarship Federal University of Santa Maria (UFSM) , Santa Maria, Rio Grande do Sul, Brazil <i>B.Eng. in Telecommunications Engineering</i> 2017 – 2023 • Supervisor: Candice Müller • Technical core: Applied Electromagnetism, Digital Signal Processing, Electronics, and Communication Systems • Final Graduation Project: “Design and development of a four-element microstrip uniform linear array for RTLS applications”
HONOURS AND AWARDS	Second Best Student Paper Award, Latin American CubeSat Workshop (LACW), 2024 (paper C-3)
INTELLECTUAL PROPERTY	Deployable Wire Antenna Module for CubeSat (“Módulo de antena filamentar ejetável para CubeSat”), developed in the M.Sc. thesis Non-patented technology (know-how) owned by UFSC and offered for non-exclusive licensing under Technology Offer Call No. 15/2025/SINOVA/UFSC (September 2025). UFSC Official Bulletin No. 170/2025.

PROFESSIONAL ACTIVITIES	SENAI CIMATEC , Salvador, BA, Brazil (remote)	
	<i>R&D and Innovation Fellow, Level 3 (Nanosatellite Competence Center)</i>	04/2026 – 11/2026
	<i>Research Fellow, Ph.D. student (FEESC / SENAI Bahia project)</i>	09/2025 – 02/2026
	• Development of communication modules for the CIMATELITE satellite mission and future projects. • Design of CubeSat antennas, reverse engineering of RF systems, technical reports, and scientific papers.	
	Space Technology Research Laboratory (UFSC) , Florianópolis, SC, Brazil	
	<i>Research Fellow, Ph.D. student (FEESC)</i>	03/2026 – 05/2027
	<i>Research Fellow, M.Sc. student (FEESC)</i>	05/2023 – 07/2025
	• Catarina Constellation, Space System A3: research and development of communication modules, antennas, and the satellite tracking and control ground station. • Support in GNSS radio-occultation technical management, component procurement, design-review documentation, scientific writing, and advising of undergraduate students.	
	Tycho Waves , Florianópolis, SC, Brazil	
	<i>Founder and Research Engineer</i>	07/2025 – present
	• On-demand R&D engineering services for custom antennas and satellite communication systems. • Design, simulation, and implementation of custom antennas; antenna prototype raised to TRL 5. • R&D&I partnership agreement with the Brazilian Space Agency (AEB, 04/2026) for a scientific and technological experiment aboard the Suborbital Microgravity Platform (PSM) of Operation Potiguar, Phase 2.	
	KHOMP , Florianópolis, SC, Brazil	
	<i>Hardware Engineering Intern, R&D (RF & Electronics)</i>	01/2022 – 02/2023
	• Electromagnetic simulations of Bluetooth antenna arrays and wave propagation models for indoor RTLS; Bluetooth and LoRa antenna simulation and testing, impedance matching, signal integrity, and electromagnetic compatibility analysis. • Angle-of-arrival estimation for a Bluetooth 5.1 indoor RTLS product: baseband CTE signal simulation, MUSIC algorithm, and neural-network estimators.	
	GEAI Research Group, UFSM , Santa Maria, RS, Brazil	
	<i>Undergraduate Research Member</i>	2021
	• GPS anti-spoofing countermeasures; electromagnetic interference from magnetohydrodynamic effects during hypersonic re-entry (communication blackout).	
	Institute of Energy and Mobility (IEM, formerly INRI), UFSM , Santa Maria, RS, Brazil	
	<i>Undergraduate Research Fellow (Technological Innovation Fellowship, FATEC)</i>	05/2019 – 06/2021
	• Prediction of the functional capacity of step-up transformers under winding load imbalance, considering fast thermal dynamics and remaining useful life; thermal simulation of transformer radiators.	
	Health Sciences Center, UFSM , Santa Maria, RS, Brazil	
	<i>Undergraduate Project Fellow (FIEN)</i>	06/2018 – 12/2018
	• Developed the pressure-sensing hardware and ran the validation tests of a respiratory muscle strength assessment system (multidisciplinary teaching and research project).	
	Occupancy-monitoring system for the UFSM campus bus (extension project), 2018.	
TEACHING EXPERIENCE	Teaching Intern (Ph.D. teaching practicum), EEL7035 Microprocessors and Microcontrollers, B.Eng. in Electronic Engineering, UFSC, 2026/1 – 2026/2. Taught laboratory classes under the course instructor's supervision and provided student support. Undergraduate Teaching Assistant, Linear Algebra, UFSM, 2018.	
OTHER PROFESSIONAL ACTIVITIES	Chair Support, Organizing Committee, Latin American CubeSat Workshop (LACW), Salvador, Brazil, 2024. Organizing Committee, IEEE Workshop on Radio Occultation in Small Satellites (ROSS), 2023.	

OUTREACH	Extension Fellow (FIEX), remote operation of the UFSM Astronomical Observatory via the Internet, 06/2021 – 12/2021. First author of the project's expanded abstract, V AUGM Extension Congress, 2021.
FUNDING	Antenna Prototype Qualification (TRL 5) and Suborbital Flight Participation Grant: Call for Projects (Edital de Projetos) 2025 - Fundo Catarina (Brazil) Amount: 16,800 BRL - 2025
PAPERS UNDER REVIEW	UR-1. Alcantara Guevara, Y., Bezerra, E. A., Viana, J. D., Travassos Jr., X. L. Printed S-band CubeSat Antennas: Quantitative Review and Sensitivity-Guided Prototype Qualification. IEEE Access, submitted in September 2026.
PAPERS IN PREPARATION	P-1. Alcantara Guevara, Y., Travassos Jr., X. L., Bezerra, E. A. Software-Defined Radios for CubeSat Communications: A Systematic Review. In preparation for IEEE Access.
CONFERENCE PUBLICATIONS	C-1. Alcantara Guevara, Y., Travassos Jr., X. L. Methodological Framework for the Selection of S-Band Antennas on CubeSat Platforms. Latin American CubeSat Workshop (LACW), Florianópolis, Brazil, 2026. To appear in the proceedings. C-2. Schmitt Jr., A. J., Rezende, M. E. E., Barcellos, J. C. E., Berkenbrock, J., Alcantara Guevara, Y., Bett, G. K., Cordioli, J. A., Bezerra, E. A. Dynamic Vibrational Testing of CubeSat Systems: A Subsystem Methodology and Experimental Validation. Latin American CubeSat Workshop (LACW), Florianópolis, Brazil, 2026. To appear in the proceedings. C-3. Alcantara Guevara, Y., Travassos Jr., X. L., Bezerra, E. A. Quadrupole Antennas for CubeSats: Radiation Characteristics in Different Configurations and Initial Results. 2024 Latin American CubeSat Workshop (LACW), Salvador, Brazil, 2024.
OTHER CONFERENCE CONTRIBUTIONS	O-1. Carneiro, L. R., Alcantara Guevara, Y., Bezerra, E. A. Analysis of Dielectric Material for S-Band Microstrip Antenna Aimed at Space Applications. Latin American CubeSat Workshop (LACW), Salvador, Brazil, 2024. Preliminary full paper, LACW 2024 Companion Book v0.1, pp. 240–245.