

Rubem Vasconcelos Pacelli

GENERAL INFORMATION

Fortaleza, Ceará, Brazil
Universidade Federal de Ceará (UFC)
[UFC-PPGETI-GPSI](#)
[Website](#)

Email : rubem.engenharia@gmail.com
Mobile : +55 85 981824344
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CAREER SUMMARY

Skilled engineer with a multidisciplinary background in

- Modulation/synchronization theory, symbol detection, and statistical signal processing.
- Machine learning and neural networks.
- Field Programmable Gate Array (FPGA).

EDUCATION

MSc in Teleinformatics Engineering <i>Universidade Federal do Ceará (UFC)</i>	Jan 2019 – present <i>Fortaleza, Brazil</i>
BSc in Electronic Engineering <i>Universidade de Fortaleza (Unifor)</i>	Jan 2013 – Dec 2018 <i>Fortaleza, Brazil</i>

EXPERIENCE

IRD–UFC research partnership <i>Universidade Federal do Ceará (UFC)</i>	Jun 2019 – Present <i>Fortaleza, Brazil</i>
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- Research student.
- Developed a research project in collaboration with the IRD (*Research Institute Pour Le Développement*).
- Research on Machine Learning, Neural networks, and statistical signal processing.

RESEARCH PROJECTS

Research and development of fully digital modems for satellite applications <ul style="list-style-type: none">• Fully digital modem for satellite application, aiming at its implementation in FPGA.• Design of the logical scheme of the modulator and demodulator system.	Feb 2019 – Present
Non-Coherent GMSK Demodulator for Cubesat Application <ul style="list-style-type: none">• Development of Non-Coherent GMSK Demodulator for Cubesat Application	Feb 2017 – Jan 2018
Synchronization in OFDM systems <ul style="list-style-type: none">• Research on synchronization techniques applied to OFDM systems.	Feb 2016 – Jan 2017
Synchronization of signals with multicarrier <ul style="list-style-type: none">• Research on synchronization techniques applied to multicarrier systems.	Feb 2015 – Jan 2016

TECHNICAL SKILLS

Technical

- Python and its data science ecosystem (Panda, Numpy, Scikit-Learn, Scipy, ...).
- MATLAB/Simulink, C, C++, Java, Assembly, VHDL.
- Git, MicroSoft Office, and \LaTeX .
- Web scraping, Regex, and RPA (Robotic Process Automation).
- Mathematical animations engine for teaching/presentation purpose: [Manim](#).

Language

- English: Full professional working proficiency.
- French: Elementary knowledge.
- Portuguese: Native speaker.

TEACHING AND SUPPORT

I have experience as an assistant teacher in the Control Theory course at the Universidade de Fortaleza (UNIFOR), during my undergraduate course in Electronic Engineering.

PUBLICATIONS

My academic publications are also listed on [Google scholar](#).

Teses

- Bachelor's Thesis, "Projeto de um conversor para carregador portátil com interface USB tipo-C.". Advised by prof. Bruno Ricardo de Almeida. Universidade de Fortaleza (UNIFOR).

Papers

- *Pacelli, R. V.; Lucena, A. M. P. . Sistema OFDM com estimadores de frequência e de fase para sincronização de portadora*. Revista Tecnologia, v. p. 40, 1-16, 2019.
- *Figueiredo, S. S. ; Lucena, A. M. P. ; Pacelli, R. V. . Técnica de Seleção de Portadoras para Sistema OFDM em Canais Dispersivos no Tempo*. Brazilian Journal of Development, v. 6, p. 14318-14324, 2020.
- *Pacelli, R. V.; Lucena, A. M. P. . Modem GMSK completamente digital com demodulação não-coerente*. Brazilian Journal of Development, v. 6, p. 17988-17996, 2020.
- *Pacelli, R. V.; Lucena, A. M. P. ; Figueiredo, S. S. . Técnica de sincronização de portadora para sistemas de comunicação OFDM*. Brazilian Journal of Development, v. 6, p. 14297-14305, 2020.

Conference Proceedings

- *Pacelli, R. V. ; Lucena, A. M. P. ; Mota J. C. M.. All-digital AFSK modem with Viterbi detection for TT&C CubeSat transceiver*. In: XXXVIII Simpósio Brasileiro de Telecomunicações e Processamento de Sinais - SBrT 2020, 2020.
- *Mourao, J. A. ; Lucena, A. M. P. ; Araujo, D. C. ; Pacelli, R. V. . Uma técnica para sincronismo de frequência em modulação OFDM*. In: Encontros Científicos 2016, Fortaleza. XXII - Encontro de iniciação à pesquisa, 2016. v. XXII.
- *Pacelli, R. V.; Lucena, A. M. P. ; Araujo, D. C. ; Mourao, J. A. . Sincronização do tempo de símbolo em sistemas OFDM*. In: Encontros Científicos. In: XXII Encontro de Iniciação à Pesquisa, 2016.
- *Pacelli, R. V.; Pontes, H. P. . Eficiência energética na área de programação paralela*. In: Encontros Científicos, 2015, Fortaleza. XXI Encontro de iniciação à Pesquisa, 2015.