Mr. Murilo Silva

1. ***Background***

B.Eng., Instituto Federal de Educação, Ciência e Tecnologia da Bahia, September 2014
M.Eng., Memorial University, May 2017
PhD., Memorial University, May 2021 (expected)

2. ***Thesis and Supervisors***

Generalized Functions Approach to the Derivation of the High-Frequency Radar Cross-Section of Ocean Surfaces with Electromagnetically-Large Waves

- Supervisors: Dr. Eric W. Gill and Dr. Weimin Huang

3. ***Publication***

1) M. Silvai, W. Huang, and E.W. Gill, "High-Frequency Radar Cross-Section of the Ocean Surface with Arbitrary Roughness Scales: Higher-Order Corrections and General Form," *IEEE Trans. Antennas Propag.*, 2021. (accepted)
2) M. Silvai, W. Huang, and E.W. Gill, "High-Frequency Radar Cross-Section of the Ocean Surface with Arbitrary Roughness Scales: A Generalized Functions Approach," *IEEE Trans. Antennas Propag.*, vol. 69, no. 3, pp. 1643-1657, 2021.
3) M. T. Silva, R. Shahidi, E. W. Gill, and W. Huang, "Nonlinear extraction of directional ocean wave spectrum from bistatic HFSWR data," *IEEE J. Oceanic Eng.*, vol. 45, no. 3, pp. 1004-1021, 2020.
4) M. T. Silva, E. W. Gill, and W. Huang, "Effects of Electromagnetically-large Waves on the Second-Order Radar Cross Section of the Ocean Surface in the HF Band," *IEEE NECEC Conference*, St. John's, Canada, 2020. (Wally Read Best Young Professional Paper Award)
5) M. T. Silva, E. W. Gill and W. Huang, "Second-order correction to the HF radar cross-section of the ocean surface at electromagnetically high sea states," *MTS/IEEE Oceans*, Singapore/USA, 2020.
6) M.T. Silva*, E. Gill, and W. Huang, "HF Radar Cross-Section of Ocean Surfaces With Arbitrary Wave Heights," *IEEE International Symposium on Antennas and Propagation and North American Radio Science Meeting*, Montreal, Canada, 2020. (Student Paper Competition Honorabe Mention Award)
7) M. T. Silva*, E. W. Gill, and W. Huang, "Electromagnetic scattering from a perfect electrically conductive sphere in curvilinear coordinates using a generalized functions method," *Radio Sci.*, vol. 54, no. 11, pp. 1099-1111, 2019.

8) M. Silva, E. W. Gill, and W. Huang, "First-order high-frequency scattering for ocean surfaces with large roughness scales," *IEEE NECEC Conference*, Newfoundland, Canada, 2019.
9) M. T. Silva*, E. W. Gill, and W. Huang, "High Frequency Radar Cross Section for an Ocean Surface with Arbitrary Heights," *Radio Oceanography Workshop 2012 (ROW19)*, Victoria, Canada, 2019.
10) M. Silva, E. W. Gill, and W. Huang, "Empirical Initial Value Estimation for Nonlinear Extraction of Ocean Wave Spectra from Bistatic HF Radar Data," *IEEE NECEC Conference*, Newfoundland, Canada, 2018.
11) M. Silva, E. W. Gill, and W. Huang, "An Improved Estimation and Gap-Filling Technique for Sea-Surface Wind Speeds Using NARX Neural Networks," *J. Atmos. Oceanic Tech.*, vol. 35, no. 7, pp. 1521-1532, 2018.
12) M. T. Silva, R. Shahidi, E. W. Gill, and W. Huang, "An Improved Nonlinear Extraction of Directional Ocean Wave Spectrum from Bistatic HFSWR Using Tikhonov Regularization in Hilbert Scales," *MTS/IEEE Oceans*, Charleston, USA, 2018. (Best Student Poster Competition Finalist)
13) M. T. Silva, W. Huang, and E. W. Gill, "Filling Gaps in Wind Speed Data - A Neural Networks Approach," *MTS/IEEE Oceans*, Kobe, Japan, 2018.
14) M. Silva, E. W. Gill, and W. Huang, "The Use of Artificial Neural Networks in Hindcasting and Filling Gaps in Buoy Wind Speed Data Under Extreme Winds," *IEEE NECEC Conference*, Newfoundland, Canada, 2017.

4. ***Award***

- Wally Read Best Young Professional Paper Award, *IEEE NECEC Conference*, St. John's, Canada, 2020
- Kenneth Hickey Award in Ocean Remote Sensing, MUN, St. John's, Canada, 2020
- C.J. Reddy Student Travel Grant, *IEEE International Symposium on Antennas and Propagation and North American Radio Science Meeting*, Montreal, Canada, 2020
- Student Paper Competition Honorabe Mention Award, *IEEE International Symposium on Antennas and Propagation and North American Radio Science Meeting*, Montreal, Canada, 2020
- Best Student Poster Competition Finalist, MTS/IEEE Oceans, Charleston, USA, 2018
- Fellow of School of Graduate Studies, MUN, 2021 (to be awarded)