

Summary

Experienced graduate research assistant with a demonstrated history of cutting edge phased array antenna technology research and development. Skilled in Antenna Design, RF & Microwave Systems, Phased Arrays, Radars, Meteorology, and Power Systems. Currently looking for a full-time position in where the hardware of phased arrays and radar systems are being developed.

Expected graduation date: Dec 2019

Experience

Radar Innovations Laboratory

NORMAN, OKLAHOMA

Graduate Research Assistant

Jan 2015 – present

Dual-polarized high-performance antenna element design for multi-function phased array radars. Near- and far-field antenna measurements, antenna calibration, manufacturing techniques for PCB antennas, radar data processing, artificial dielectric layers, and material characterization.

Puerto Rico Weather Radar Network

MAYAGÜEZ, PUERTO RICO

Undergraduate Research Student

Aug 2011 – Dec 2014

Undergraduate student leader and community outreach coordinator. Projects: Radar maintenance task force for both TropiNet and Off-the-Grid (OTG) radar networks. Radar installations in Lajas, Ponce, Mayagüez, and Aguadilla, PR. Solar power system design and assembly for S-band dual-pol receiver for a graduate thesis project.

Internships

National Center for Atmospheric Research (NCAR)

BOULDER, COLORADO

Earth Observing Laboratory

Summer 2014

Summer Undergraduate Program for Engineering Research (SUPER). Design and experimental characterization of high-performance radomes for atmospheric radar applications.

National Oceanic and Atmospheric Administration (NOAA)

MIAMI, FLORIDA

National Weather Service

Summer 2013

Using Atmospheric Freezing Level to Predict Severe Hail in WFO Miami's County Warning Area.

Collaborative Adaptive Sensing of the Atmosphere (CASA)

MAYAGÜEZ, PUERTO RICO

Electrical and Computer Engineering Department

Summer 2012 and 2011

Design and installation of a hybrid renewable energy source using a wind turbine along with solar panels for an OTG radar (Aguadilla, PR). Processing algorithms for radar data including volume and sector scans, flood warnings, automatic ON/OFF depending upon weather conditions.

Education

The University of Oklahoma

NORMAN, OKLAHOMA

Doctoral Degree in Electrical and Computer Engineering - GPA: 3.63

Jan 2015 – present

PhD courses focusing in radars and RF engineering. Special skills learned in courses include and are not limited to: microwave component design, advanced numerical solutions, radar data processing, radar engineering, and digital phased array radars.

University of Puerto Rico, Mayagüez Campus

MAYAGÜEZ, PUERTO RICO

Bachelor of Science in Electrical Engineering - GPA: 3.25

Aug 2008 – Dec 2014

Accredited by ABET, the fields explored during specialization were Applied Electromagnetics and Power Systems.

Minor in Atmospheric Science and Meteorology - GPA: 3.24

Aug 2012 – Dec 2014

The minor complies with the requirements of the General Schedule Qualification Standards (GS-1340) for meteorology series. Some related courses are: Atmospheric Thermodynamics, Physics Meteorology, and Advanced Dynamic Meteorology.

Honors and Awards

1st Place - Best Student Paper Award

2016 IEEE International Symposium on Phased Array Systems & Technology - Waltham, MA

1st Place - Best Student Poster Award

2015 AMS Transition of Research to Operations - Phoenix, AZ

Skills & Trainings

Fully Bilingual (English & Spanish), Professional Ethics Training, Chess Enthusiast (ELO 1856).
Software: HFSS, ADS, AWR, MATLAB, Word, Excel, Power Point, L^AT_EX.

Publications - Journal Papers

- [1] **Diaz, J.D.**, Salazar, J.L., Ortiz, J.A., Aboserwal, N., Lebron, R.M., Fulton, C., & Palmer, R. (2018). "A Cross-Stacked Radiating Antenna with Enhanced Scanning Performance for Digital Beam-Forming Multifunction Phased-Array Radars." *Transactions on Antennas and Propagation*, Vol. XX, No. XX, XXXX. [Accepted for publication]
- [2] Aboserwal, N., Salazar, J.L., **Diaz, J.D.**, Ortiz, J.A., & Fulton, C. (2018). "Source Current Polarization Impact on the Cross-Polarization Definition of Practical Antenna Elements: Theory and Applications." *Transactions on Antennas and Propagation*, Vol. XX, No. XX, XXXX. [Accepted for publication]
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Publications - Refereed Conference Papers

- [1] **Diaz, J.D.**, Salazar, J.L., Ortiz, J.A., Aboserwal, N., Fulton, C., & Palmer, R. (2016). "A Dual-Polarized Stacked Patch Antenna with Wide-Angle and Low Cross-Polarization for Fully Digital Multifunction Phased Array Radars." *Fifth International Symposium on Phased Array Systems and Technology*. Boston, MA.
- [2] Ortiz, J.A., Salazar, J.L., **Diaz, J.D.**, Aboserwal, N., Jeon, L., Sim, S., & Chun, J. (2016). "Ultra-Compact Universal Polarization X-band Unit Cell for High-Performance Active Phased Array Radar." *Fifth International Symposium on Phased Array Systems and Technology*. Boston, MA.
- [3] Salazar, J.L., Aboserwal, N., **Diaz, J.D.**, Ortiz, J.A., Fulton, C. (2016). "Edge Diffraction Impact on the Cross-Polarization Performance of Active Phased Array Antennas." *Fifth International Symposium on Phased Array Systems and Technology*. Boston, MA.
- [4] **Diaz, J.D.**, Salazar, J.L., Mancini, A., & Colom, J. (2015). "Multilayer Radome Design And Experimental Characterization Of Scattering and Propagation Properties for Atmospheric Radar Applications." *Fifth Conference on Transition of Research to Operations*. Phoenix, AZ.
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Publications - Others

- [1] Salazar, J., Ortiz, J., **Diaz, J.D.**, Aboserwal, N., Yu, T., Fulton, C., Yeary., M., & Palmer, R. (2018). "Update of a Low-Profile C-band Active Array Antenna for a Polarimetric Imaging Radar System." *IEEE International Symposium on Antennas and Propagation / USNC-URSI Radio Science Meeting*. Boston, MA.
- [2] Salazar, J., **Diaz, J.D.**, Ortiz, J., Fulton, C., Aboserwal, N., Sigmarsson, H., Yeary., M., & Palmer, R. (2018). "An Ultra Low-Cross-Polarization S-band Active Array Antenna for a Fully Digital Polarimetric Phased Radar System." *IEEE International Symposium on Antennas and Propagation / USNC-URSI Radio Science Meeting*. Boston, MA.
- [3] Aboserwal, N., Salazar, J., Ortiz, & **J.D., Diaz, J.** (2017). "The Impact of Higher Order Modes on the Cross Polarization Levels of a Rectangular Patch Antenna." *Symposium on Antennas and Propagation / URSI Radio Science*. San Diego, CA.
- [4] **Diaz, J.D.**, Estupinan, J., & Konarik, S. (2014). "Using Atmospheric Freezing Level to Predict Severe Hail in WFO Miami's County Warning Area." *26th Conference on Weather Analysis and Forecasting / 22nd Conference on Numerical Weather Prediction*. Atlanta, GA.