RYAN LAGOY

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OBJECTIVES & SKILLS

To inspire and mentor the next generation of engineers by leveraging extensive industry experience in systems engineering and RF technologies, while fostering an environment of continuous learning, innovation, and academic excellence. I am passionate about driving innovation in my field to solve the most complex problems in society.

RF Systems: *Cascade analysis, link budget modeling, receiver sensitivity/noise figure testing, antenna design and test, PA optimization, digital predistortion/linearization, proficiency with test equipment (VSA/VSG, VNA, Spec An, Power Sensors, Signal Generator, etc.)* **Mathematics**: *Mathematica*	**Version Control**: *Git, Subversion* **Python3**: *Poetry/Pip, Tox/Pylint/Black, Virtualenv, pandas, SciPy, Matplotlib/Plotly, SCPI automation, Django* **Software**: *MATLAB, C/C++/C#, LabVIEW 2007, LabWindows CVI, NI TestStand* **Operating Systems**: *macOS, Linux, Windows, Unix*	**Electromagnetics**: *ANSYS High Frequency Structure Simulator (HFSS), FEKO EM Simulation Software, Cadence, SPICE* **Mechanical**: *PTC Creo, SolidWorks* **Leadership**: *Communication, Team-building, Problem-solving* **Hobbies**: *Woodworking, Sailing, Surfing, Skiing, Golfing*

PROFESSIONAL EXPERIENCE

Boston University, Boston, MA	*Sep 2024 - Present*
Adjunct Professor ● *Teaching and mentoring Electrical and Computer Engineering 100+ students through a two-semester senior design course, guiding them from project conception and requirement definition to implementation and testing of client-driven or self-defined projects.*	
Starry, Inc., Boston, MA	
Director of Hardware, Systems, and Manufacturing Engineering ● *Leading a team of RF systems, RF design, electrical, and mechanical engineers* ● *Overseeing all product and regulatory certifications, including FCC Part 15/30 and UL Safety Certification* ● *Directing system test development, product optimization, calibration procedures, and design verification for all millimeter-wave systems* ● *Overseeing the manufacturing and refurbishment line responsible for all Starry module and system assembly and test*	*Mar 2023 - Present*
Senior Manager, RF Systems Engineering ● *Led the systems design, calibration design, integration, validation, performance optimization, and manufacturing of over 100 product variants:* ○ *37GHz, 24GHz, and 60GHz operating frequencies* ○ *Low-cost stations to high-performing base stations* ○ *1st through 5th generation systems* ○ *Supply chain shortage mitigations* ○ *Internal millimeter-wave tools* ● *Implemented system engineering principles such as formal requirement definitions, requirement matrices, and design reviews to improve alignment across the departments*	*Sep 2019 - Mar 2023*

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RF Systems Engineer ● *Steering Committee Member for the 2019 IEEE International Microwave Symposium in Boston* ● *Improved WiFi (802.11ac) performance in a static network topology representative of Starry's fixed wireless network by optimizing the PHY/MAC* ● *Designed open-loop digital pre-distortion techniques to improve the error vector magnitude of the 160MHz 802.11ac constellation, using proprietary memory polynomials*	*Oct 2017 - Sep 2019*
BAE Systems, Inc., Nashua, NH	
Senior Research Engineer ● *Researched and developed novel pre-distortion and equalization adaptive Volterra series algorithms to suppress undesired non-linear behavior inherent in RF/microwave front ends* ● *Integrated digital and RF domains for modular and rapidly developing technology in various internal research and development prototyping efforts*	*Jun 2016 - Oct 2017*
Engineering Leadership Development Program ● *Attended the highly selective University of Massachusetts, Amherst RF/Microwave Engineering Industry Master's Program* ● *Researched and developed antenna systems in the specialized High Power Antenna Systems Product Realization Group with Dr. Michael O'Brien* ● *Coordinated BAE Systems FIRST Robotics $200,000+ budget and sponsorship, which included optimizing spending for increased community outreach, employee support, and company return on investment*	*Apr 2013 - Jun 2016*
Boston University, Boston, MA	
Industry Expert ● *Treasurer of IEEE Society on Social Implications of Technology Boston Chapter* ● *Co-Founder and Vice Chair of IEEE Nuclear and Plasma Sciences*	*Jun 2013 - present*
Senior Project: Calibration of Microarray Slides in the Optical Characterization and Nanophotonics Laboratory Advisor: Professor M. Selim Ünlü and Professor Alan Pisano ● *Improved immunodiagnostics in a more compact, less expensive, and computationally efficient precision optics device than what is currently available in the market* ● *Designed software that implements various image-processing techniques, such as filtering, background subtraction, and Hough transformation* ● *Used CUDA to program an NVIDIA graphical processing unit for parallel computation of the Levenberg-Marquardt fitting algorithm*	*Sept 2012 - May 2013*
Transient Electric Field Simulation to Understand Nanoparticle Injection Via Electroporation (2012) Advisor: Professor Mark Horenstein ● *Modeled the electric field through horizontal layers of two mediums (layers of skin) with different conductivities, thicknesses,*	*2012*

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and permittivities when a high voltage is applied by any custom contour on the top surface of the skin • *Use of Maxwell's equations, charge simulation method, electric field boundary conditions, and image charge theory for simulation in MATLAB*	
Neuroscience Research in the Gardner Laboratory of Neural Circuits *Advisor: Professor Timothy Gardner* • *Performed echoic memory research with a two-choice learning paradigm (design/program/create large-scale testing system)* • *Programmed a NI-Speedy-33 DSP module in LabVIEW for data acquisition and timed/random actions* • *Clustered sonogram data with MATLAB* • *Performed brain surgeries on live Zebra Finches*	*2010-2012*

PATENTS

- US20210377748A1: Nodes for high frequency fixed wireless access network
- US10623118B2: Modular multi-channel RF calibration architecture for linearization
- US20180090842A1: Electrically tuned, meandered, inverted L antenna

PUBLICATIONS

- *Y. Lim, R. Lagoy, B. Shinn-Cunningham, and T. Gardner. Restart-Go operant training of Zebra Finches (2012).*

LECTURES

- *Developing New Technology for Affordable Internet (March 11, 2021 and March 27, 2023), Boston University, IEEE SSIT*

EDUCATION

- *University of Massachusetts Amherst, Master of Science in Electrical Engineering, 2017, 4.0 GPA*
  - *RF/Microwave Engineering Industry Master's Program*
- *Boston University, Bachelor of Science in Electrical Engineering, 2013,* 3.94 GPA

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HIGHLIGHTED HONORS AND AWARDS

- **Starry, Inc.**
  - CEO Award (2022)
- **BAE Systems, Inc.**
  - IMPACT Award for Winning a Strategic Contract (2017)
  - Placed in the Top 10 and Runner-Up to the Top 4 in the UK IET Global Challenge in Association with RedR (2017)
  - IMPACT Award for Successful Test Event (2017)
  - IMPACT Award for Contributing to the Innovation Expo (2015)
  - IMPACT Award for Contributing to the FIRST Robotics Outreach Initiative (2014)
- **Boston University**
  - Boston University Scarlet Key Award, Most Prestigious Non-Academic Award (2013)
  - Michael F. Ruane Award for Excellence in Senior Capstone (2013)
  - P. T. Hsu Memorial for the Outstanding Senior Design Project (2013)
  - Resident Assistant Community Development and Leadership Award (2013)
  - Engineering Student Advisor Award (2013)
  - Engineering Alumni Student Leader Award For Contributions To The College Of Engineering (2013)
  - Tau Beta Pi Engineering Honor Society (2012-2013)
  - Order of the Engineer (2013)