Aria Rouzmehr

Microwave/Antenna Engineer

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EXPERIENCE

Comtech Xicom, Santa Clara, CA — *RF Engineer*

Apr 2024 - Jan 2025

- Designed and simulated a novel waveguide-microstrip transition on Alumina to iterate and improve upon the existing Ka-band power amplifier design.
- Collaborated with high-profile stakeholders and in-house production personnel to define and demonstrate success metrics of the new block upconverter unit. Presented results to upper management.
- Transitioned to testbed software development for upconverter and developed Python-based drivers for test equipment.

Astranis Space Technologies, San Francisco, CA — *Associate Antenna Engineer*

Nov 2022 - Dec 2023

- Performed 3D pattern tests of satellite feedplanes in the anechoic chamber and used measured results to validate reflector-level radiation patterns.
- Planned, validated, and oversaw over-the-air signal integrity testing of satellites in Ku-, Ka-, and V-bands.
- Supported senior engineers in facilities planning for satellite passive intermodulation testing.
- Improved in-house testing infrastructure through new test antenna procurement, codebase upgrades, and anechoic chamber cleanliness. Quartered required testing time needed for flight antennas for acceptance testing.

Santa Clara University, Santa Clara, CA — *Undergraduate Researcher*

Jun 2022 - Sep 2022

- Researched modulation and transmission methods to develop a transmitter similar to that used by NOAA satellites 15, 18, and 19
- Designed an example receiver for data collection from NOAA satellites and measured relevant antenna parameters
- Hosted weekly data collection sessions with peers to increase the visibility of the RF and applied EM program at Santa Clara University. Quadrupled second- and third-year enrollment in subsequent EM courses during the Winter 2023 quarter.

EDUCATION

Santa Clara University, Santa Clara — *B.S., Electrical Engineering*

Sep 2019 - Jun 2023

SKILLS

Software: Keysight ADS, Ansys HFSS, AutoCAD, Cadence Allegro

Test Hardware: Spectrum Analyzers, Anechoic Chambers, VNAs

Shop Work: Carpentry Tools, 3D Printing, EV Maintenance

Data Analysis: MATLAB, C, Python, SCPI

Communication: GitHub, Cross-disciplinary discussion, Leadership

LANGUAGES

English, Spanish (Working Proficiency), Farsi (Working Proficiency)

RELEVANT COURSEWORK

Antenna Theory and Design

Microwave Circuit Design

Digital Signal Processing

Signal Integrity in IC/PCB Systems

ARM Embedded Systems

Power Electronics

PROJECTS

Santa Clara Radio Astronomy Program II (SCRAP II)

September 2022-June 2023

Iterated upon the previous year's hydrogen-line radio astronomy project by improving major pain points in the previous year's design. Primary contributions to the project included the simulation and procurement of a parabolic reflector and the fabrication and optimization of a 1.42 GHz antenna feed: documented design, simulation, and relevant literature for future project iterations.

Helical Antennas for Polarization Detection

January 2023-May 2023

Designed, built, and tested circular polarized helical antennas for testing polarization handedness of flight hardware in Ka- and V-band applications. Used Ansys HFSS to simulate the design with desired parameters and implemented a cost-effective solution using COTS coaxial adapters and 3D printing. Results were verified with flight hardware and in-band standard gain horns in an anechoic chamber.

Phased Array for WiFi Applications

Feb 2022-Mar 2022

Designed a dual-monopole phased array for use in the 2.4 GHz WiFi band. Verified electrical steerability of the array using pre-built phase shifters and a spectrum analyzer. Plotted a rough outline of the antenna radiation pattern using received power measurements.

PUBLICATIONS

Barnes, Logan; Quang, Michael; and **Rouzmehr, Aria**, "Santa Clara Radio Astronomy Project II (SCRAP II)" (2023). *Electrical and Computer Engineering Senior Theses.* 82.

https://scholarcommons.scu.edu/elec_senior/82