

# Mark Opfell

## Exposure & Skills

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<b>RF Standards</b>	FCC, ITU, DVB-S2
<b>Programming Languages</b>	Python, VBA
<b>HW Tools</b>	Vector Network Analyzer, Antenna Hats,
<b>SW Tools</b>	Excel (Wizard), Pycharm, Git*, Bash, Vi
<b>Scientific Python Stack</b>	NumPy, SciPy, Matplotlib, Pandas
<b>Significant Ascents</b>	Mount Rainier, Mount Adams (solo)

## Work Experience

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Job Title	<b>Lead Communication Systems Engineer</b>	
Employer	<b>Albedo</b>	Remote
Period	<b>October 2021 – Present</b>	

Designing end-to-end mission communication systems to deliver 10 cm imagery from space to the web with the swipe of a credit card.

Albedo raised seed funding in April 2021

Job Title	<b>Senior RF Systems Engineer</b>	
Employer	<b>LeoStella</b>	Tukwilla, WA
Period	<b>April 2019 – October 2021</b>	

Created technology roadmaps, architecture diagrams, link budgets, test plans, and ran hands-on troubleshooting. Collaborated with suppliers and customers to design, manufacture, test, and operate X, S, GPS, and UHF-band space+ground software defined communication systems while managing cost, schedule, risk, and SWaP. Low-Earth orbit small satellite constellations: BlackSky, Loft Orbital, and NorthStar Earth & Space.

Designed, simulated, purchased, laid out, and validated: parts, mixed signal PCB, connectors, cabling, and enclosure for a GPS RF system self-compatibility filter. Successful in-orbit operation.

Awarded for saving \$0.5 million in recurring cost for flatsat test benches with a deep dive into the technical specifications of the ground and space hardware, and concurrence with vendors.

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Job Title	<b>RF Systems Engineer</b>	
Employer	<b>Kymeta</b>	Redmond, WA
Period	<b>February 2018 – March 2019</b>	
<p>Wrote phased array antenna cross-polarization optimization algorithm in Python and integrated it with production level test codebase along with documentation, theoretical and actual response data.</p> <p>Developed and executed over-the-air combined OSI application, transport, network, and physical layer level test cases for a mobile MIMO Ku-band terminal with software defined phased array flat panel antennas and a DVB-S2 satellite modem</p>		
Job Title	<b>RF Systems Software Engineer</b>	
Employer	<b>Space Systems/Loral</b>	Mountain View, CA
Period	<b>October 2016 – January 2018</b>	
<p>Award winning role leading, developing, and managing a production Python client and services to exchange data between a PostgreSQL database storing 1 TB of antenna data and an RF downlink capacity tool.</p>		
Job Title	<b>Senior RF Systems Engineer</b>	
Employer	<b>Space Systems/Loral</b>	Mountain View, CA
Period	<b>March 2015 – October 2016</b>	
<p>Lead successful Forward downlink payload re-design, deployment, launch, in-orbit test, and handover of geostationary communication satellite Echostar 21 operating the receive at Ka-band and transmit at S-band.</p>		
Job Title	<b>RF Systems Engineer</b>	
Employer	<b>Space Systems/Loral</b>	Mountain View, CA
Period	<b>September 2013 – March 2015</b>	
Job Title	<b>Associate RF Systems Engineer</b>	
Employer	<b>Space Systems/Loral</b>	Mountain View, CA
Period	<b>June 2012 – September 2013</b>	

## Education

Degree	<b>Bachelor of Science in Electrical Engineering</b>
University	<b>University of California, Davis</b>
Period	<b>June 2009 – June 2012</b>

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