Omkar Pradhan

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About Me: I am experienced in RF sensor design, integration, and testing and am seeking an engineering leadership role. My preferred work location is greater LA area (on-site) or any US location (remote). I am a greencard holder.

Education

University of Colorado, PhD in Electrical Engineering **October 2019**

- Thesis:Endfire Synthetic Aperture Radar for Subsurface Exploration of Europa, Enceladus, and Terrestrial Glaciers

University of Colorado, MS in Electrical Engineering **December 2013**

Experience

RF/Microwave Engineer, *NASA's Jet Propulsion Laboratory* – Pasadena, CA **June 2021 – present**

- Contributed significantly to multiple ASIC-based millimeter-wave remote sensing technology development projects at JPL, that enabled up to 10x or more improvement in frequency bandwidth, spectral resolution, and power consumption. This work contributed to JPL winning a $15M award under NASA's Artemis program.
- Served as a sub-topic manager for NASA's Small Business Innovation Research (SBIR) program, representing JPL's strategic interests and helping direct $500k worth of awards to private industry.
- Mentored one doctoral student at Caltech through PhD tenure as well as two summer interns at JPL.

Postdoctoral Fellow, *NASA's Jet Propulsion Laboratory* – Pasadena, CA **October 2019 – May 2021**

- Led system integration and FPGA-based DSP design for millimeter-wave weather radar.
- Initiated a $300k R&D effort for detection of atmospheric turbulence using millimeter-wave transceivers.

Projects

Radiometer-on-Chip **June 2025 – present**

- Currently leading JPL's next-generation ASIC-based radiometer prototyping efforts to achieve up to 2x improvement in measurement sensitivity compared to state-of-the-art.

NOAA-Advanced Millimeter-wave Sounder (NAMS) **Feb 2022 – present**

- Contributing significantly to design and implementation of a three-channel millimeter-wave ASIC-based radiometer for NOAA's marine aviation operations. NAMS has 100x more spectral resolution than conventional sensors.

Advanced Ultra-high Resolution Optical RAdiometer (AURORA) **April 2024 – May 2025**

- Instrument system engineer responsible for concept-through-technology demonstration of a 110-190 GHz Earth sensing satellite-based radiometer. Led a team of 4-5 peers across NASA centers.

Microwave Electrojet Magnetogram (MEM) **Feb 2023 – May 2024**

- Developed automated pre-launch polarimetric calibration procedure for a Zeeman-effect detecting radiometer currently in low Earth orbit as part of NASA's EZIE mission. Won JPL's Voyager award for this project.

Microwave Temperature and Humidity Profiler (MTHP) **Nov 2021 – March 2022**

- Rapidly developed and deployed airborne radiometer for NCAR's airborne campaign, leading to $4M in NASA funding for the follow-on AURORA instrument. Also won NASA group achievement award for this project.

Tools and Technologies

Languages/Scripting: Verilog, C, Tool Command Language (TCL), Linux Shell, Python, Matlab

Software: Xilinx Vivado, Ansoft HFSS, TICRA Grasp, Altium, and Solid Works.

Hardware: Experienced in using Vector Network Analyzers, Phase Analyzers, Spectrum Analyzers, Power Meters