Omkar Pradhan

Alhambra, CA | omkar.pradhan@jpl.nasa.gov | 1-818-354-1823 | jpl.nasa.gov/site/research/pradhan/

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**

Professional Experience

RF/Microwave Engineer, Jet Propulsion Laboratory **June 2021 – present**
Postdoctoral Fellow, Jet Propulsion Laboratory **October 2019 – May 2021**

Projects

Spectrometer for Sentinel 6C Low Frequency Microwave Radiometer (LFMR) **May 2025 — present**

- **Responsible** for providing subject matter expertise and performance validation of 6 GHz bandwidth ASIC spectrometer as a modification to flight hardware.

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 and collaborated on instrument design across NASA centers.

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

- Leading design-through-implementation of a millimeter-wave (60, 118, and 183 GHz) radiometer for NOAA's marine aviation operations. **Responsible** for instrument system architecture, IF subsystem design, and electronic back-end programming and testing.

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

- Developed automated pre-launch polarimetric calibration procedure for JPL's 118 GHz 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 TI3GER airborne campaign. **Responsible** for novel sub-Nyquist sampling architecture, RF system design, integration, and testing. Also won NASA group achievement award for this project.

Tools and Technologies

Languages/Scripting:

- Experienced in FPGA programming with Verilog and application development and data analyses in C, Python, and Matlab as well as scripting with Tool Command Language (TCL) and Linux Shell.

Software Tools:

- Experienced with FPGA tool-flow using Xilinx Vivado, and antenna design using Ansoft HFSS and TICRA Grasp.
- Familiar with circuit architecture design using Altium, and mechanical design using Solid Works.

Hardware:

- Experienced in using vector network analyzers, phase analyzers, spectrum analyzers, and power Meters.
- Experienced in developing with Xilinx's system-on-chip (SoC) FPGA chipsets.
- Familiar with Xilinx's RFSoC FPGA chipsets.