

WeiHang Li

West Lafayette, IN 47906 • li2653@purdue.edu • (765) 464-4808
Personal Website: <https://www.weihangli.com>

EDUCATION

Purdue University, School of Engineering

Ph.D. in Aeronautical and Astronautical Engineering / Electrical Engineering

Advisors: Dr. James Garrison, Dr. Melba Crawford

Research Area: Earth Remote Sensing, Radar system, GNSS system, Communication Systems, Digital Signal Processing.

08/2022–now

Expected in 12/2026

Purdue University, School of Engineering

M.S. in Aeronautical and Astronautical Engineering (System and Aerodynamic)

Purdue University, School of Engineering

B.S. in Aeronautical and Astronautical Engineering (System Engineering)

01/2021–05/2022

Awarded in 05/2022

08/2017–12/2020

Awarded in 12/2020

INTERNSHIP & WORKING

Position Engineer, Location Tech

Internship, Qualcomm Incorp.

06/2026–09/2026

Santa Clara, CA

- Sensor fusion between VIO sensor and IMU, GNSS for mobile and extended reality
- Sensor noise and error characterization.

SOC Location System Engineer, Connectivity Lab

Internship, Samsung Semiconductor

05/2023–08/2023

San Jose, CA

- Performed Simulation analysis categorizing the impact of TCXO phase noise on GNSS signal quality, signal acquisition and tracking loop stability.
- Built a phase noise generator simulator with key TCXO parameter input for both MATLAB simulator and C++ hardware-aligned simulation model.
- Joint development and integration of TCXO and phase noise model into the GNSS signal simulator for testing potential TCXO crystal.

Dry Etch Process Development Engineer

Internship, Micron Technology

05/2022–09/2022

Boise, ID

- Involved in DRAM/HRAM dry etch process development; focused on word line Dogwood (Micron Codename for the WL metal) etch process on various structures.
- Applied machine learning to estimate material etch rate from metal blanket etch study.
- Collaborated with CVD, Metrology, Wet Process teams for vehicle design and testing.

RESEARCH

Development of S-Band Drone-Based Synthetic Aperture Radar

Research Assistant, NSF IoT4Ag ERC and Purdue Agronomy

08/2023–Present

- Leading the NSF IoT4Ag droneSAR project for developing the first of its kind small UAV based fully polarimetric synthetic aperture radar system.
- Engineered radar software processing including SAR image generation, interference filtering, motion compensation and calibration etc.

- Formulated soil moisture and biomass retrieval algorithms based on radar data and in-situ measurements.
- Led the design and planning of ground reference data collection.
- Collaborated the system hardware including some radar hardware development, drone system integration, high precision GNSS system integration etc.
- Overseeing the development of streamlined data processing program.

GNSS-R synthetic aperture radar concept and algorithm development

08/2022–Present

Research Assistant, Satellite Radio Navigation Lab

- Proposed concept for GNSS-R-SAR, architecture and algorithm of SAR processing using GNSS reflectometry signal, performance demonstration through simulation.
- Centimeter level satellite position solution for two near by satellites.
- Applied phased array processing to resolve directional ambiguity in forward-looking geometry of GNSS-Reflectometry.
- In progress development of the first ever in space demonstration of the GNSS-R-SAR concept based on CYGNSS IF recording data.

Data Assimilation of GNSS-R Soil Moisture

05/2024–12/2024

Research Assistant, Satellite Radio Navigation Lab

- Initialized the development of GNSS-R soil moisture data assimilation using Ensemble Kalman filter (EnKF).
- Acquired data product for CYGNSS soil moisture measurement and data required to run the hydrology model.
- Initial tuning on the Ensemble Kalman Filter by compare data to the SMAP Cal/Val site for optimized performance.

Signal of Opportunity P-Band Investigation(SNOOPI)

01/2023–05/2024

Research Assistant, Satellite Radio Navigation Lab

- Algorithm development for the first in space demonstration of using P-Band communication signal for earth remote sensing
- Investigated surface work function changes due to plasma events.

PAPER & CONFERENCE

- **(Pending)** The Development and full polarimetric Calibration of S-Band Drone-Based Synthetic Aperture Radar (DroneSAR).
- A UAV Based S-Band SAR for Agricultural applications, Preliminary Results from a Field Campaign, IGARSS 2025.
- Assimilation of GNSS-R Soil Moisture Retrievals into a one-dimensional Hydrological Model for Root Zone Soil Moisture Estimation, IGARSS 2025.
- High Resolution Soil Moisture and Biomass Sensing Using S-Band Synthetic Aperture Radar on a UAV Platform, AGU 2024.
- SNOOPI: Demonstrating Earth remote sensing using P-band signals of opportunity (SoOp) on a CubeSat. Advances in Space Research, 2023.
- Snooping Around: Observation Planning for the Signals of Opportunity P-Band Investigation (SNOOPI), 2022.
- Li W, Micco A, Fang D, et al. Intratympanic steroid treatments rescued recurrent hearing loss following COVID-19 vaccination and detection of an *intralabyrinthine schwannoma*. BMJ Case Reports CP 2022; 15:e249316.

- The Impact of Cathode Surface Roughness and Multiple Breakdown Events on Microscale Gas Breakdown at Atmospheric Pressure, *xccc 125*, 203302 (2019).
- Nano/Micro-Meter Electrode Topology Effects on Electron Emission, 22nd Annual Directed Energy Science & Technology Symposium, Student Workshop, Mar 2020.
- Experimental Assessment of Electrode Effects on Gas Breakdown for Microscale Gaps, 21st Annual Directed Energy Science & Technology Symposium, Student Workshop II, Apr 2019.