



PAWR Project Office

William Bjorndahl - AERPAW

This poster will showcase experiences and results using the AERPAW and POWDER-RENEW platform. AERPAW is used in our research that demonstrates the power of RF-native AI/ML models for wireless communications and sensing. AERPAW Dataset 21 is used to compare our radio-native AI/ML models to Nvidia Sionna Ray Trace results. AERPAW Dataset 19 is used to develop wireless digital-twin technologies and position a cooperating UAV through terrestrial downlink channel measurements without requiring GPS or an airborne positioning transmission during inference. AERPAW Dataset 7 is used to efficiently model antenna radiation patterns. The RENEW Argos Channel Survey dataset is used to perform channel estimation in the downlink direction using uplink measurements for many-antenna systems. Overall, these PAWR platforms have allowed me to develop RF-native and ISAC technologies during my Ph.D. at Southern Methodist University. These platforms and datasets have been used in my publications in both IEEE INFOCOM and ACM MobiSys and will be used in future research publications.