



DeepVerse 6G Machine Learning Challenge

Competition Dates: May 20th- June 20th

Registration Deadline: May 20th

Description: The DeepVerse 6G Machine Learning Challenge is a student challenge organized by the Student and Outreach Subcommittee (SOSC) of the IEEE Information Theory Society, in collaboration with the Wireless Intelligence Lab at Arizona State University (ASU) and the Information Theory Labs at National Yang Ming Chiao Tung University (NYCU). The competition is focused on developing innovative machine learning solutions for various applications using the DeepVerse 6G dataset, which comprises coexisting multi-modal sensing and communication data, such as mmWave wireless communication, camera, GPS data, LiDAR, and Radar, collected in realistic wireless environments.

Objective: The competition consists of three tasks of increasing difficulty that require participants to use different machine and deep learning modalities and techniques. The scenario considered is as follows: a remote radio head (RRH) is tasked with assisting a base station (BS) in communicating toward a user equipment (UE). The RRH obtains the channel state information (CSI) of the channel between the RRH and UE and wishes to communicate this estimate to the BS through a noiseless but rate-limited channel. The BS reconstructs CSI under a given MSE distortion, while also complementing this estimate through a datastream consisting of radar, lidar, GPS, and image data. This CSI estimate is then used in downstream tasks that are not considered further.

Eligibility and Participation: The team can consist of up to three members, of which there should be at least two student members. At least one of the student members of the competing team should be registered as a member of the [IEEE Information Theory Society](#) at the time of registering for the competition.

Registration and Link to Training Data: Please register using the following [link](#). The training data is available through the following link.

Slack Channel: You may contact the organizers with any questions about the format and registration process through the following [Slack](#) channel: <https://tinyurl.com/3snwvcyj>

Submission of Results: The competition dataset and submission page can be accessed via the following [link](#).

Prizes: The three best entries stand to win exciting prizes!