CARRADA: Camera and Automotive Radar with Range-Angle-Doppler Annotations

CONTRIBUTIONS
- Semi-automatic pipeline to generate range-angle-Doppler annotations.
- CARRADA dataset: synchronized camera and raw radar data with generated annotations.
- Baseline for radar semantic segmentation using Fully Convolutional Networks.

Semi-automatic pipeline
- Detect and track an object in the camera image.
- Compute its physical properties (real world coordinates, relative velocity).
- Project a feature point from a given object in the DoA³-Doppler radar representation.
- Cluster and track the object in the DoA³-Doppler representation for an entire sequence.
- Project the clusters on the raw radar representations to obtain the annotations.

CARRADA DATASET
- Synchronized camera and raw radar data (range-angle and range-Doppler).
- 30 sequences, +12K frames, +20mins of recording on a test track.
- One or two objects per sequence. Categories: pedestrian, cyclist and car.
- Resolution: camera = 1238x1028, range-Doppler = 256x64, range-angle = 256x256.
- Baseline for radar semantic segmentation
- Code and data are online.