

Title: “Artificial Intelligence and Machine Learning (AI/ML) for the Physical Layer of Wireless Communications”

Abstract:

Artificial intelligence and machine learning (AI/ML) algorithms are expected to become an integral part of designing beyond 5G wireless systems. Recently, 3GPP has started a study item on AI/ML for the New Radio air interface which aim to access possible use cases of AI/ML for the PHY layer. This momentum of AI/ML into wireless communications is motivated by their better performance, lower latency, and the possibility to reduce the power consumption of the system. This presentation covers some of the recent research results on using AI/ML for MIMO channel estimation. Specifically, we present the use of conditional generative adversarial networks (cGANs) for reducing the number of radio frequency (RF) chains in the base station (BS) antennas.

Short bio:



Brenda Vilas Boas is pursuing PhD studies in electrical engineering with focus on wireless communication at TU Ilmenau in partnership with Nokia, Germany. She completed master’s (2019) and bachelor’s (2017) degree in electrical engineering at Federal University of Para (UFPA), Brazil.

From 2016 to 2018, Brenda was manager of the Community Cellular Telephony (CELCOM) project with the Telecommunications, Automation and Electronics Research and Development Center (LASSE/UFPA), which aimed to bridge the digital divide in the Amazon rainforest.

Brenda has been a volunteer of IEEE since 2015, with various positions related to student activities and women in engineering groups. In 2019, she was awarded the IEEE R9 Student and Young Professional Activities Prominent Supporter award due to her engagement and support to student’s and YP’s activities.