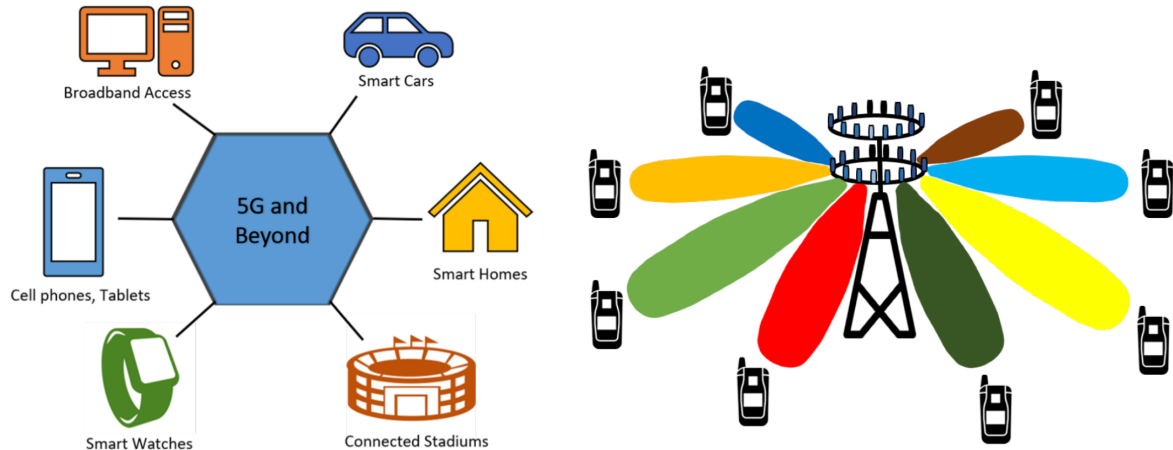


NEW CLASS OFFERING -- FALL 2022

18-729: Board-Level RF Systems for the Internet-of-Things

Units: 12. Delivery: Classroom Lectures + Lab Session MWF 2:30pm-4:20pm

Come learn what 5G/6G cellular communications is all about and why it will be such a major breakthrough compared to 3G and 4G cellular.



This class will teach you how radios work (at a block level) and just enough theory about RF wave propagation to understand multipath interference and other key aspects of RF communications systems. Our context will be the future in which every device wants to communicate with the world (i.e., the Internet-of-Things)

Learning will be hands-on

Students will each build and test a simple MIMO radio front end / antenna array and control it with a raspberry-pi. We will explore key concepts like multipath interference, beam forming, beam steering and null steering via the Lab sessions.

Who should take this?

Seniors and Graduate Students who are interested in the future of RF communications and who have taken at least undergrad circuits (e.g., 18-320) and intro to signal processing (e.g., 18-290) or equivalent. Students should be proficient in both undergraduate level circuits and signal processing. Students should be proficient with MATLAB and programming in Python.