UNDERGRADUATE SUMMER RESEARCH PROGRAM PROPOSAL

- Project title

  MIMO Antennas for Internet of Things (IoT) Applications

- Faculty advisor

  Tutku Karacolak

- Project description

  The number of connected IoT devices worldwide will increase nearly 2-fold, to almost 50 billion, and wireless/mobile data traffic is expected to increase thousand-fold within the next decade. To address this challenge, multiple input and multiple output (MIMO) systems are currently used in almost all 5G/6G wireless devices utilizing multiple antennas. The use of multiple antennas increases the data rate within the limited bandwidth and power levels. In this project, our goal is to design efficient MIMO antennas with large bandwidth, high isolation, and high gain.

- Deliverables

  Antenna prototypes are expected to be designed and fabricated at the end of the project.

- Time requirements

  200 hours (Flexible M-F, 9:00-5:00 May 16 thru Aug 9)

- Required skills and knowledge

  Interest in applied electromagnetics, antenna design, and wireless communications.
  Must have completed ECE 370 successfully.

- Preferred qualifications

  Experience in Computer Aided Design.