When: **Friday 15:00 – 15:30, November 22, 2019**
Where: **ETB 1035**

Speaker: **Aditya Lahiri**

Ph.D. Student in Prof. Aniruddha Datta's Group
Department of Electrical and Computer Engineering
Texas A&M University

Title: **Bayesian Modeling of Plant Drought Resistance Pathway**

Abstract: Plants are sessile organisms and are unable to relocate to favorable locations under extreme environmental conditions. Hence, they have no choice but to acclimate and eventually adapt to the severe conditions to ensure their survival. As traditional methods of bolstering plant defense against stressful conditions come to their biological limit, we require newer methods that can allow us to strengthen plants' internal defense mechanism. These factors motivated us to look into the genetic networks of plants. The WRKY transcription factors are well known for their role in plant defense against biotic stresses, but recent studies have shed light on their activities against abiotic stresses such as drought. We modeled this network of WRKY transcription factors using Bayesian networks and applied inference algorithm to find the best regulators of drought response. Biologically intervening (activating/inhibiting) these regulators can bolster the defense response of plants against droughts.

Bio: Aditya Lahiri is a current Ph.D. student working under the guidance of Professor Aniruddha Datta at the department of electrical and computer engineering at Texas A&M University. Aditya earned his M.S. in electrical engineering from Texas A&M University, College Station in 2018 and B.S. in electrical engineering from Purdue University, West Lafayette in 2016. His current research work involves using probabilistic graph theory and statistical inference to identify abiotic stress regulatory genes in plants.