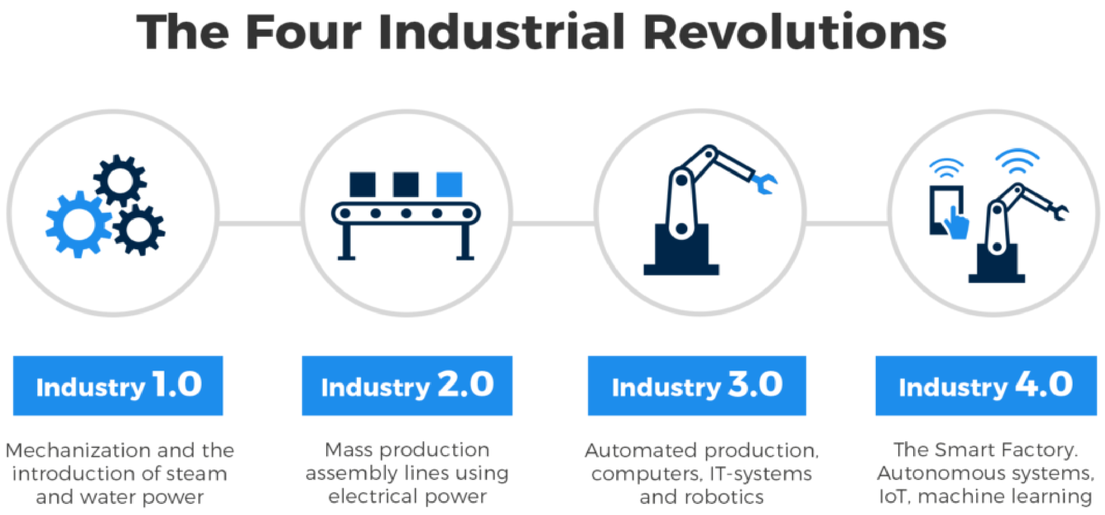
4IR Advanced Research and Innovation Park

Department of Electrical and Electronic Engineering, BUET

Overview:
The 4IR Advanced Research and Innovation Park is dedicated to pioneering advancements in the Fourth Industrial Revolution (4IR) technologies. Our mission is to drive cutting-edge research and innovation across various domains of electrical and electronic engineering, fostering collaboration between academia, industry, and government.



Vision: To be a leading hub for 4IR research and innovation, driving technological advancements and societal impact.

Mission:

- To advance research in cutting-edge 4IR technologies.
- To facilitate collaboration between academia, industry, and government.
- To develop solutions that address real-world challenges and improve quality of life.

Laboratories:

- ❖ Nanoscale Characterization Laboratory
- ❖ Nanofabrication Laboratory
- ❖ Wearable Technologies Research Laboratory
- ❖ IoT Research and Innovation Laboratory
- ❖ Applied Artificial Intelligence Research Laboratory
- ❖ Next Generation Telecom Research Laboratory
- ❖ Green Energy Research Laboratory
- ❖ Intelligent Systems, Automation and Control Laboratory
- ❖ Electric Vehicle Research Laboratory

Key Features

- **Smart Access Control:**
  - Smart door sensor
  - Electromagnetic lock
  - Face recognition camera
  - Human presence sensor
- **Smart Energy Management:**
  - Smart switch for light and fan
  - Smart socket
  - Smart circuit breaker and energy meter
- **Smart Environment Monitoring:**
  - Indoor and outdoor air quality monitoring unit
  - Temperature and humidity sensors and camera
  - Gas detector sensor
- **Smart Surveillance:**
  - Video surveillance camera equipped with embedded high-precision CNN face detection, person tracking and attribute recognition (e.g., age, gender, glasses, hats, masks, clothing categories, hairstyles, emotions)
- **Smart FDAS:**
  - Intelligent fire detection camera
  - Smart smoke detector with alarm
- **Control and Management:**
  - Android Application for monitoring and controlling all IoT devices
  - IoT data server and web application to access all data stored in the server
  - Voice control of all IoT devices with Alexa
  - Control of all IoT devices with a touch panel

Request for Contribution

We invite all faculty members of the Department of EEE to contribute to the 4IR Advanced Research and Innovation Park.