

Integrated Engineering Capstone Project: Fall 2020 - Spring 2021

Realistic and Virtual Reality-based Modeling of Electric Power Transmission, Distribution, Control

GOAL:

Enable the creation and use of realistic and accurate virtual reality models of electric power transmission, distribution, control, and usage scenarios (worlds/maps) for research and instruction.

BACKGROUND:

Minecraft is a 3D/VR game that enables the creation of complex virtual worlds. Mods enable modifying Minecraft. There are 1000s free of mods, i.e.: Animals, Armor, Sims-style, Mechanics, Flight Simulators. There are several mods for energy and mechanics, and a couple to simulate electrical systems. However, these do not model electrical systems and their operation and control in a way that is realistic enough to enable quality research and education in power systems by using 3D worlds and VR.

OBJECTIVES:

Develop a Minecraft Mod (using MCreator) that enables realistic modeling of electric power transmission, distribution, control, and usage.

HARDWARE and ENVIRONMENT:

A laptop computer or workstation and Internet connection plus willingness to learn and try new code are the only needs. Students may also work remotely if needed or desired. We plan on using GitHub and MS Teams for collaboration.

CUSTOMER:

UI CoE: Daniel Conte de Leon.

EXPECTED TEAM:

About 2 to 3 Computer Science and 1 Electrical Engineering students.

