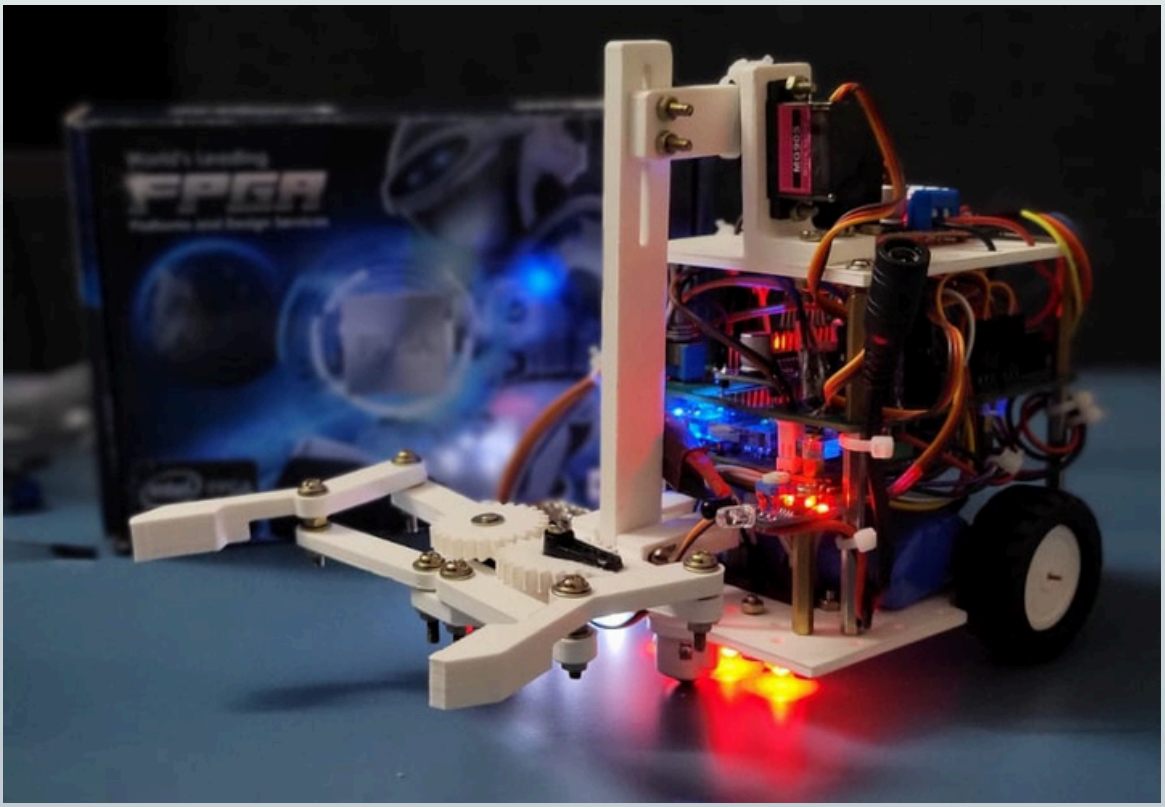
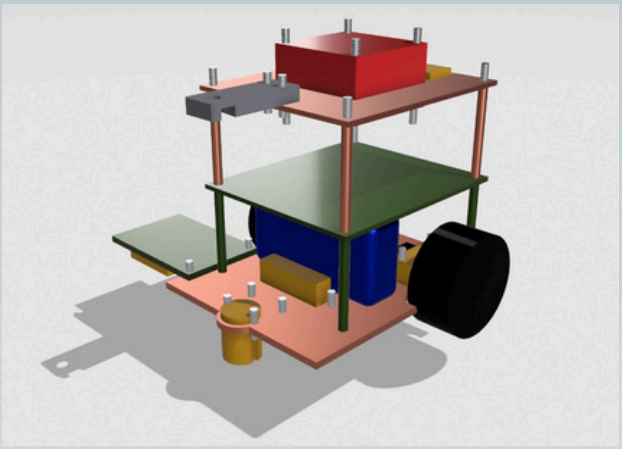
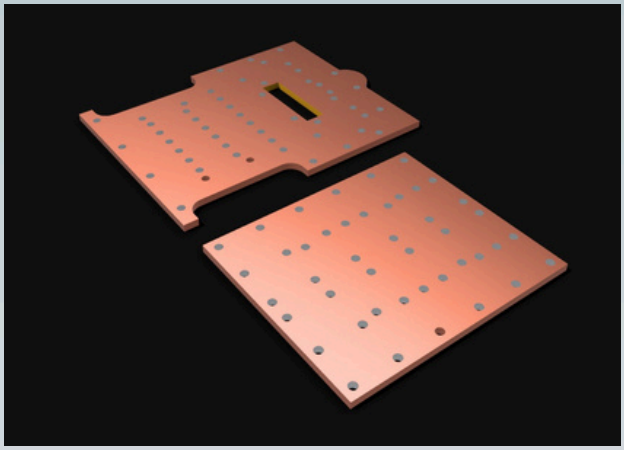
LINE FOLLOWER ROBOT USING ALTERA FPGA

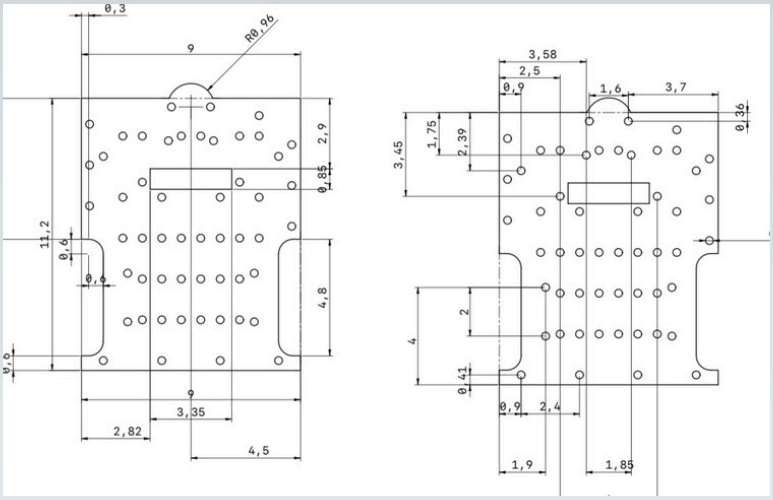
(DEC 2024 - JAN 2025)

I WAS TASKED TO BUILD A CHASSIS FOR A LINE FOLLOWER ROBOT FOR IIT-BOMBAY'S EYANTRA ROBOTICS COMPETITION. I WAS GIVEN 2 WEEKS TO DESIGN, FABRICATE, AND ASSEMBLE THE WHOLE ROBOT, WHILE ALSO FOLLOWING A STRICT DIMENSION CONSTRAINT OF 12*12*20 CM FOR THE FPGA, BATTERY, PCB, CONTROLLERS, AND SENSORS. IT WAS AN INTERESTING CHALLENGE TO TRY TO FIT ALL THE DIFFERENT COMPONENTS WITHIN THE TIGHT CONSTRAINT, WHILE ALSO NEEDING TO TAKE CENTER OF MASS, STRUCTURAL INTEGRITY, AND MODULARITY OF COMPONENT POSITIONS FOR FUTURE CUSTOMIZATION INTO ACCOUNT.

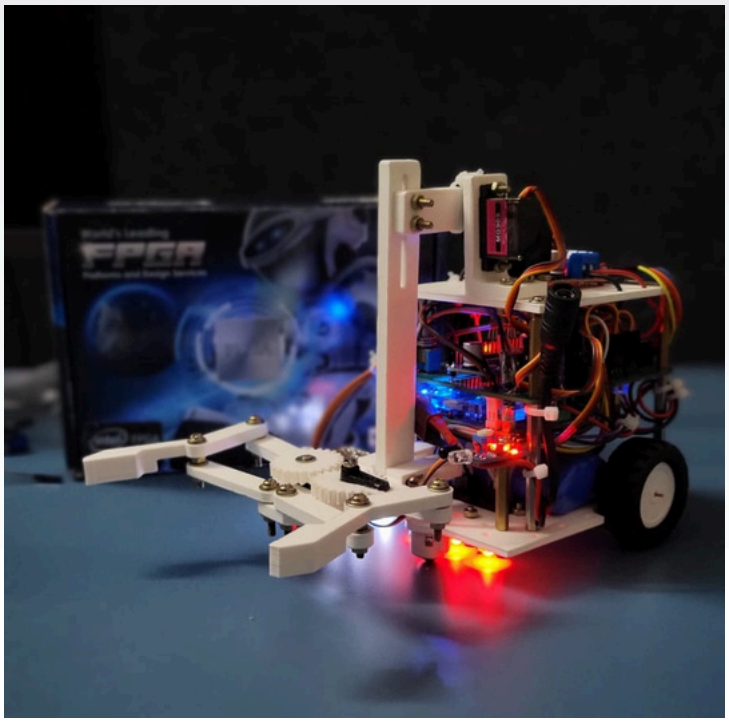


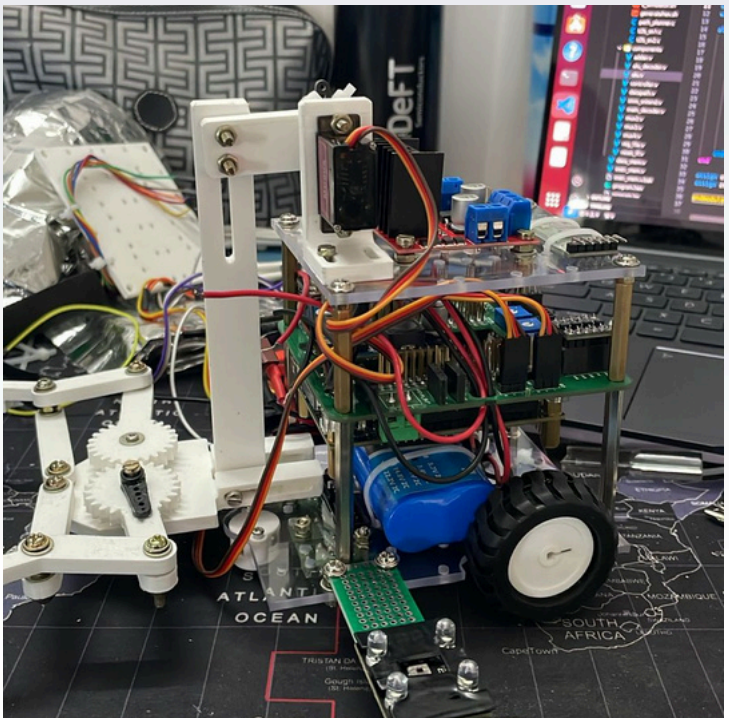






FINAL 3D MODEL





3D PRINTED

ACRYLIC SHEET