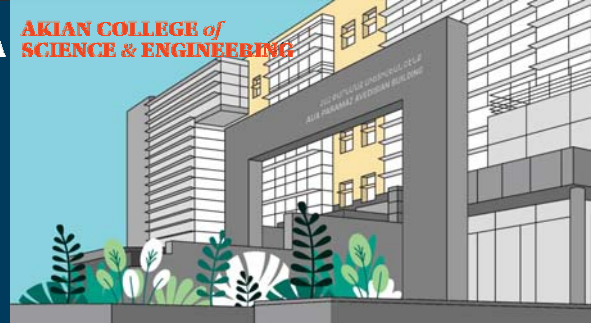


# Design of a Pick & Place Robotic Arm

Authors: Sarkis Kabrailian (team leader), Meri Karamyan, Julietta Ghazaryan, Aneta Baloyan, Hrayr Ghahriyan

Akian College of Science and Engineering

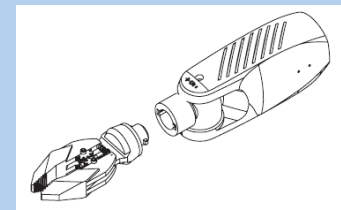
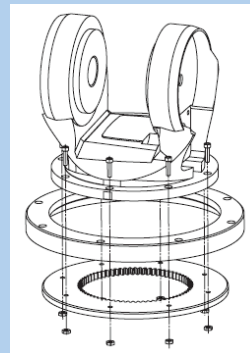
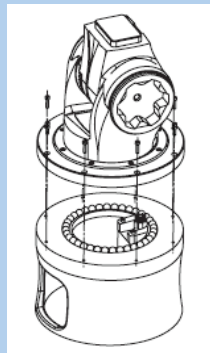
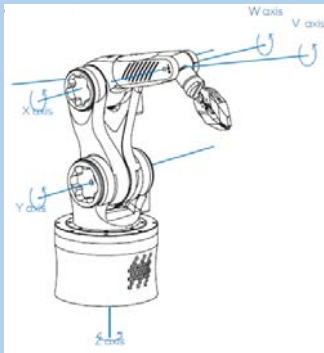
Software: Creo Parametric Year: 2019



## Introduction

During the Introduction to Product Design course, six teams were assigned to design a pick and place robotic arm based on the pictures and overall sizes of the robot. Due to this project based experience, the students learned advanced design tools and developed their teamwork skills. But it was also a competition between the teams where the prize for the winning team was the fabrication and assembling of the robot.

## Assignment

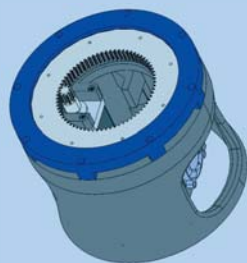


A guideline tutorial with pictures of subassemblies of the robotic arm and an explanation of how they work was attached to the project assignment.

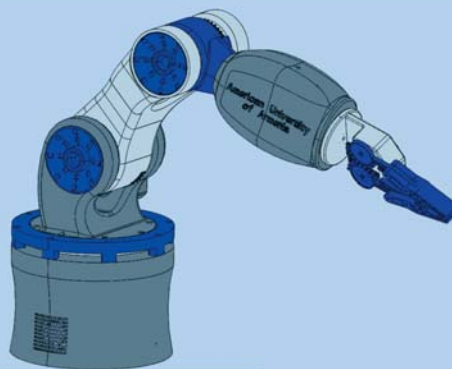
## Design, 3D Printing, Assembling, and Programming

After the results of the competition were announced, Sarkis Kabrailian, the winning team leader, took the initiative to prepare the 3D model components for printing. The motors and other standard items were purchased by the college. All the components were printed in the Prototyping lab on the Zortrax M200 3D printer. Painting of the components, their assembling, and programming of the robot were also done by Sarkis with the support of the Lab Manager Arman Asatryan.

Robby was demonstrated in the CSE pavilion during the WCIT - 2019 in Yerevan (see the photo on the right).



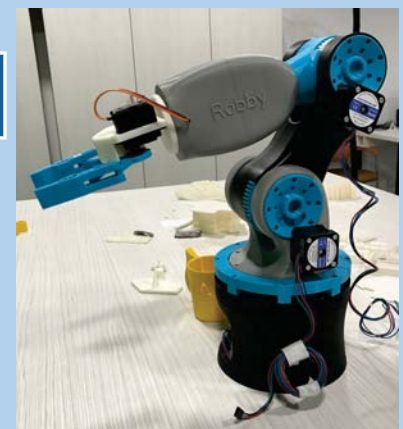
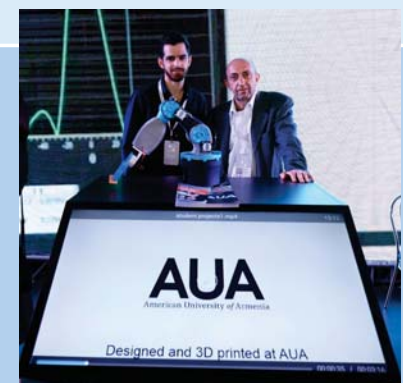
The 3D model of the Z-axis subassembly (above) and the process of 3D printing of the mounting part of the subassembly (below).



The 3D model of the robot arm (above) and the V-axis subassembly testing process (below).



Scan to see how Robby works!



The physical model of the robotic arm.

