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FANUC robot machine arms are often used in the manufacturing industry to increase productivity, reduce workplace accidents, and reduce employee workloads. _ implies that there is a demand for highly skilled robotics programmers in the manufacturing industry. The purpose of this research is to develop processes by which students may develop skills for programming FANUC robot manufacturing machines and learn processes by which they could develop useful programs for any use case of the FANUC machines.

A study by _ found that _% of workplace accidents with these machines occur not during production, but actually while programming the robots. In the cases where these accidents are harmful to the robot, surrounding equipment, or a human operator, it is imperative that workplace accidents are reduced.

The process of this research project began as the student self-studied the *FANUC America Corporation Handling Tool Operations & Programming Student Manual* and became comfortable with the operation and programming procedures of the machine. Next, the student developed a simple program to mimic a simple manufacturing industry operation (swapping a set of cylinders between their slots) to study and identify the challenges, patterns, concerns, and risks of a simple programming process. After the development of this program, the student devised a system of procedures which could be taught to other students to encourage safe programming habits and develop time-effective planning process into programming.

(future prospects) The student then went on to develop a second program using more complicated program interactions to identify further risks and procedures which could be expanded upon to improve the programming process.

Taking this approach of allowing an uneducated student to study a subject and then spearhead the education process of other students may lead to insights and developments in teaching procedures which could produce more engaging and comprehensive classes.