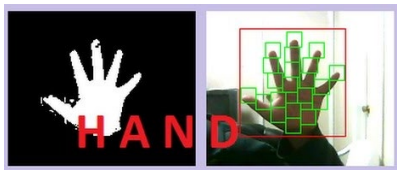
McMaster University | ENGINEERING
W Booth School of Engineering Practice and Technology

PROJECT SUMMARY

Image Processing for the Safety of Clinching Machines

CHALLENGE

The design and implementation of a safety feature for user's hand(s) / finger(s) while operating a Clinching machine.



PARTNER

ESP Clinching Joining System

The team from Best Industrial Deal Company at ESP strive to give clients highly specialized machines that are custom engineered. With customer service a priority, they are available through design & engineering, program management, testing, maintenance and onsite technical support.

TEAM

- Dr. Marjan Alavi, Assistant Professor, McMaster University

- Monika Saleeb, M. Eng. Design

MILESTONES & OUTCOME

- Research current safety methods and adapt /build on them to suit ESP Clinching machines
- Prototyping and testing different potential solutions to present them to the team
- Evaluating the performance of the proposed solution in different conditions
- Proposing user-feedback mechanisms incorporated with the Clinching machines

VALUE

There is currently no safety measures put in place to protect workers utilizing ESP Clinching machines; the work done in this project built the foundation by exploring the design space and proposing a solution that can be developed into a fully-functional safety system.

NEXT STEPS

- Inquire into embedded systems to be used with the Machine Learning Model
- Save bounding box location data to be used as a safe-zone
- Test and prototype ultrasonic sensor for safety

STUDENT REFLECTION

- Enhanced technical abilities including but not limited to programming, troubleshooting and algorithm design
- Strengthened communication skills in a professional setting with community partners, stakeholders and supervisors