Future Plans

- Improve accuracy of human and item detection

- Implement charts that show library peak hours and various statistics

- Android and iOS Applications

- Implement a map that graphically displays available tables

- Expand System to different campus study areas and eventually beyond our own campus. Targeting other Campuses and Libraries.

For More Information

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STUDY SPACE AVALIBILITY

Save time searching
Spend time studying

OntarioTech
UNIVERSITY

Benefits of using our product

- Check seating availability when planning to study so you know where you can find space.
- Spend less time searching, and more Studying!
- Gather statistical data on study space peak hours to help people plan there day around offered services.
- Avoiding Expansion of buildings? Efficiently use existing study spaces and push back the need for costly construction!

HOW TO USE OUR PRODUCT?

- Users require a UOIT email in order to create an account to access information.
- On the web page Students can view available seating on each floor.
- Librarian will have access to options for changing library layout if tables are moved at a later date.

How to set up the product

- The product uses image processing to determine which seats are occupied.
- A Raspberry Pi with a camera module will be installed on every table.
- A wifi network that supports WPA2-Personal or WEP encryption

HOW THE SYSTEM WORKS

- Raspberry Pi Camera periodically takes pictures of table top surfaces
- Image's from Raspberry Pi are uploaded to Google Cloud Vision API
- Google cloud then sends back a response codes including ratings indicating the confidence and the objects that are detected in the image.
- This data is then uploaded to the database from where the website retrieves table availability data to display on the web page

The Design

- User Application - Allows students and staff to log in and check library space availability Using Django Framework
- Firebase Database – Synchronizes data between the web app and the detection system
- Admin Application – Allows admin to change sensor and system settings
- Human Detection – This System detects if a person is present at a table
- Item Detection – Detects if items are left on the table.