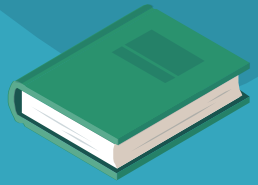
Ambient Book Shopping

Intelligent Book Retail Experience

By Natnael Takele - S5446838



Overview

An innovative project designed to create a smart environment for a seamless and enjoyable book-buying experience.

The traditional challenges faced in libraries like the following are addressed through this project.

- ➔ Time-consuming searches for favorite books
- ➔ Lengthy checkout processes
- ➔ Inadequate surveillance

Key Solutions

Preference-Based Navigation

- Stereo camera captures customer images
- Recommends specific rooms based on preferences
- Directs customers to chosen location

Efficient Book Purchase

- Scan book barcodes using mobile phones
- RFID antenna enables quick, secure transactions

Enhanced Security

- Stereo camera detects suspicious activities
- Bookcases equipped with secure boxes

Ontology Knowledge Representation

The Ambient Book Shopping ontology is created using Protègè and the Pellet reasoner, adhering to the following guidelines:

Top Classes (TBox)

- At least 3 top classes are defined.
- 7 top classes are introduced, including Engagement, Book, Box, Persona, Section, Sensor, and Bookcase.

Object Properties (TBox)

- At least 4 object properties are established.
- 13 object properties are created, facilitating relationships between classes.

Data Properties (TBox)

- 7 data properties are defined, enhancing the ontology with additional details.

Conclusion and Future Improvements

This ontology serves the assignment requirements, but for future applications in real-world smart environments, enhancements could include:

- ★ Addition of an "Author" class for further book classification.
- ★ Customization of the number of objects and sections based on seller preferences.

This project lays the foundation for a future where the love for reading thrives in technologically enriched spaces.

Thanks!

Do you have any questions?

s5446838@studenti.unige.it
nattyman37@gmail.com