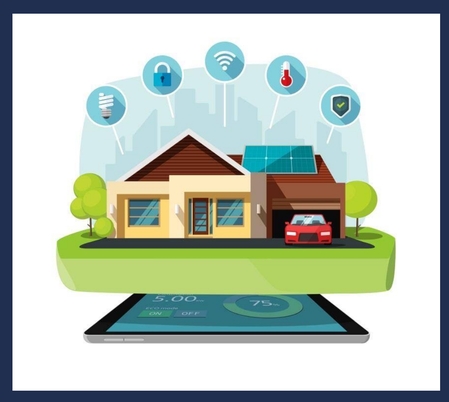
Green Intelligent Homes: A Perspective on the Future of Smart Homes and their Implications



Joseph Bugeja and Andreas Jacobsson

Internet of Things and People Research Center, Department of Computer Science and Media Technology, Malmö University, Sweden

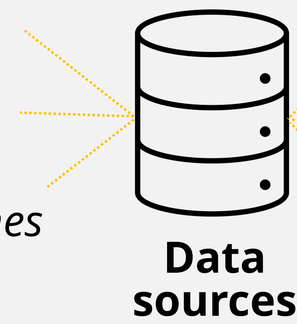
Introduction

- Smart homes allow the residents to remotely manage and control different aspects of their home
- 375.3M smart home devices in 2024[1]
- ~20 connected devices in a US household by 2025[2]
- >160% increase in publications from 2015-2020[3]
- What are the potential futures of smart homes and their implications?

Methods

- Explorative study
- Thematic analysis
- Heterogenous data sources

- *Scientific literature*
- *Industry studies*
- *Consumer magazines*



- *Online forums*
- *Newspapers*
- *Blogs*

Results

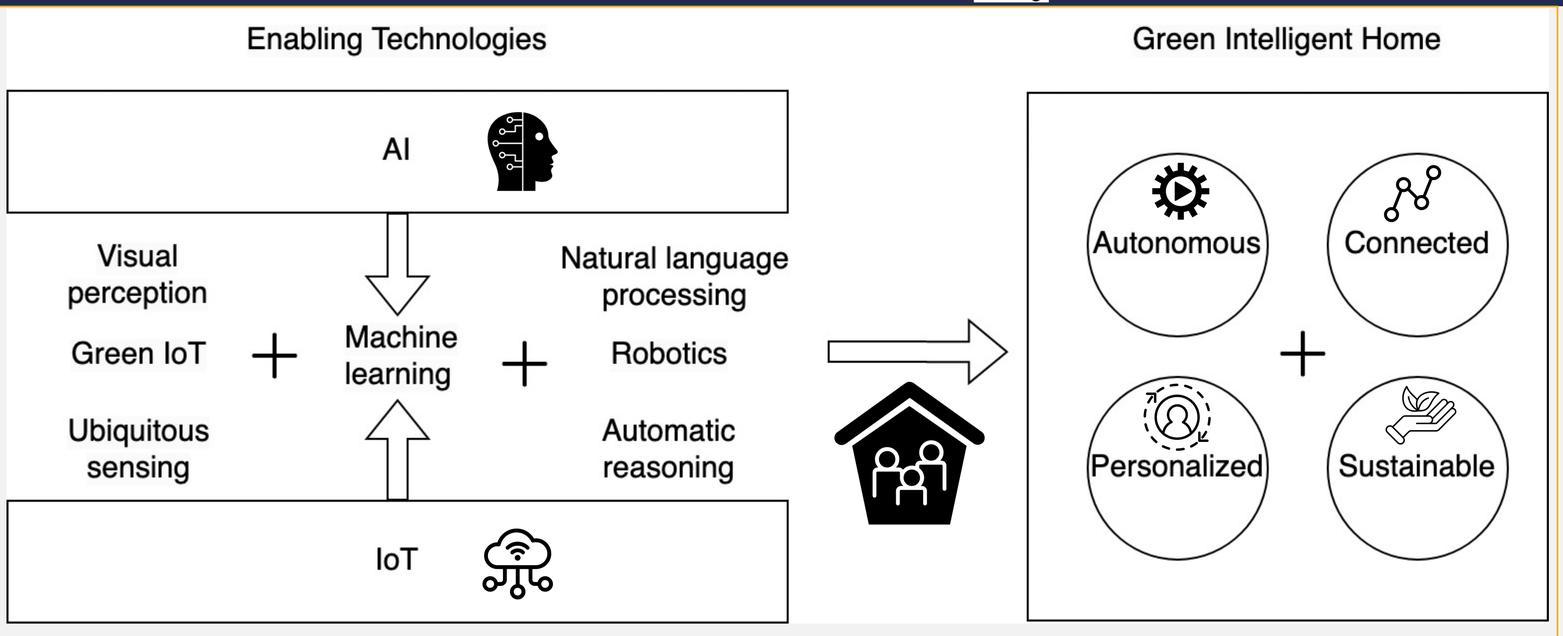


Figure 1. A conceptual representation of the Green Intelligent Home.

Green Intelligent Homes **use IoT and AI technologies to provide an optimal smart living environment** for the residents

Unless **responsible smart home development** is followed, future smart homes raise several concerns

Smart home characteristic	Privacy and security	Energy consumption	Manipulation and inequality risks	Lack of self-sufficiency
Autonomous	◐	◐	◐	●
Personalized	●	○	◐	◐
Connected	◐	◐	●	○
Sustainable	○	●	○	○

Table 1. Concerns and characteristics of the Green Intelligent Home.

Discussion

- Smart homes have the potential to revolutionize the way we live
- This study contributes to the ongoing discourse on the future of smart homes and their implications
- Ethical and social implications of smart homes should be considered alongside their technological potential

MALMÖ UNIVERSITY
INTERNET OF THINGS AND PEOPLE RESEARCH CENTER

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2. Parks Associates, parksassociates.com, 2023.
3. Dimensions, app.dimensions.ai, 2023.

Contact

Joseph Bugeja
joseph.bugeja@mau.se

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