

Development of a robotic nutritional coach

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Summary

1. Exploration of the potential of robotic assistants in the field of nutritional coaching.
2. Design and development of an interactive wellness use case on the QTrobot.
3. Conduct of user testing and assessment, identifying areas for further enhancements.

Introduction

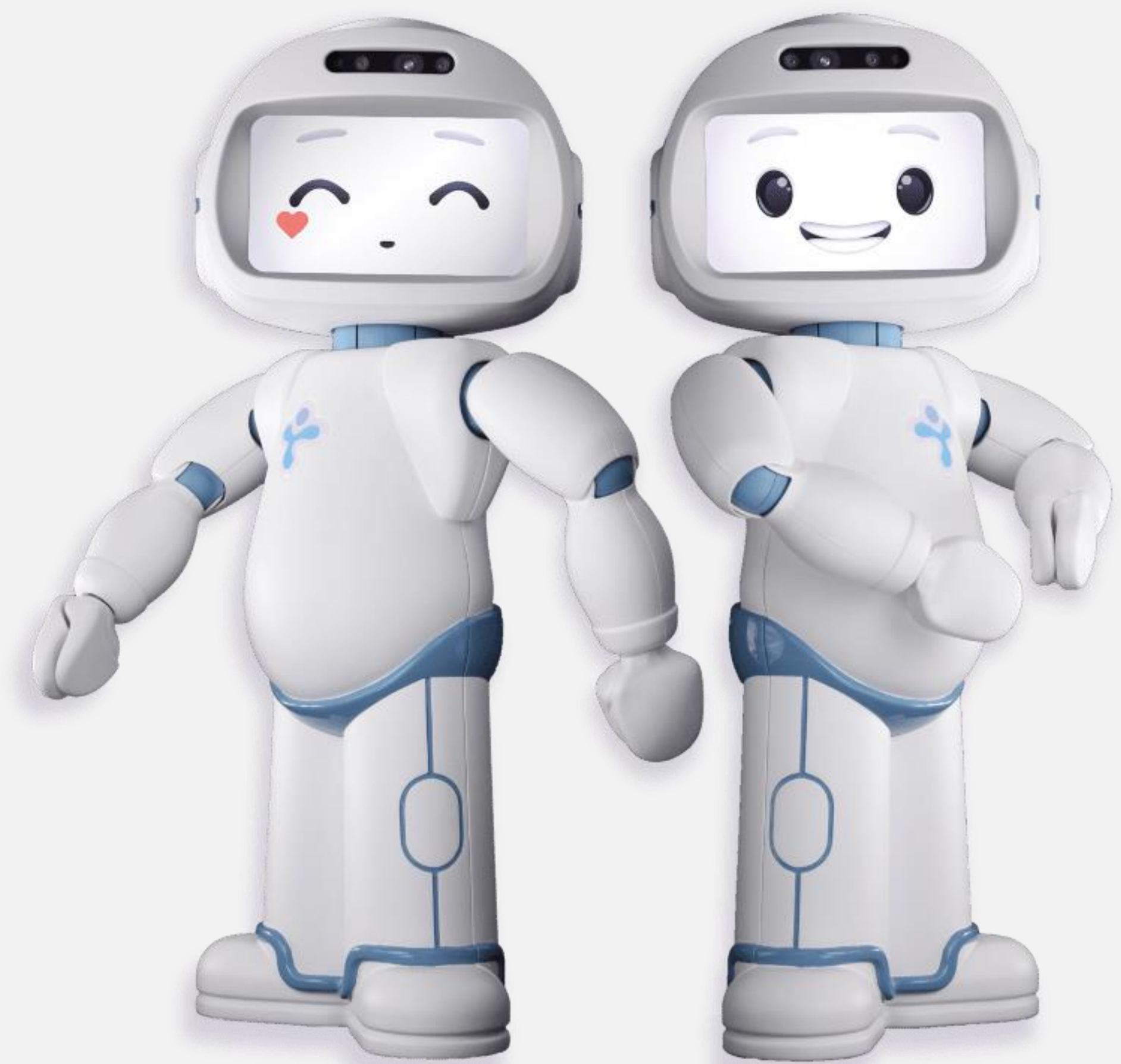
- As the market for health and wellness education expands, **robotic solutions** offering personalized **coaching** are increasingly gaining prominence in response to the rising global health challenges related to diet and nutrition.
- This project **aims** to **harness** the capabilities of the **QTrobot** as a **nutritional coach**, providing individualized dietary advice through engaging interactions.
- By **marrying** cutting-edge **robotics technology** with the field of **nutrition**, I hope to bring about a paradigm shift in the way nutritional coaching is delivered.

Methods

- The wellness use case was developed using Python, with the goal of making the QTrobot an interactive and effective nutritional coach.
- The objectives were the following:
 1. Providing personalized dietary advice based on user behaviour and profile.
 2. Implementation of a reactive and proactive mode of interaction.
 3. Ensuring an engaging interaction experience with the robot.
 4. Integrating a user and food database for extensive meal recommendations with the care of avoiding user's allergies.
- A series of user tests were conducted to assess the system's effectiveness and identify areas for future improvement.

Results

- Development of two functional programs using user and meal database: a command-line interface and a speech-to-text system.



- Enhancement of user experience by integrating motion and emotional responses into the QTrobot application.

Tools



Conclusions

- The preliminary results show the promising potential of robotic assistants as effective nutritional coaches.
- User interactions with the robot have demonstrated its potential to deliver an engaging and effective nutritional coaching experience.
- For future improvements, the project explores possibilities such as integration of recognition features, usage of a tablet and more flexible user-profile modifications for a nutritional coaching experience even more personalized and effective.