

Something bout' Olive Green,
she said

"Ooh, something bout leaf too...i guess"

presented by,

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Abstract |

With the wide applications of smart devices and mobile computing, smart home becomes a hot issue in the household appliance industry. The controlling and interaction approach plays a key role in users' experience and turns into one of the most important selling points for profit growth. Considering the robustness and privacy protection, wearable devices equipped with MEMS, e.g., smartphones, smartwatches, or smart wristbands, are thought of one of the most feasible commercial solutions for interaction. However, the low-cost built-in MEMS sensors do not perform well in capturing finely grained human activity directly. In this paper, we propose a method that leverages the arm constraint and historical information recorded by MEMS sensors to estimate the maximum likelihood action in a two-phases model. First, in the



Abstract II

arm posture estimation phase, we leverage the kinematics model to analyze the maximum likelihood position of users' arms. Second, in the trajectory recognition phase, we leverage the gesture estimation model to identify the key actions and output the instructions to devices by SVM. Our substantial experiments show that the proposed solution can recognize eight kinds of postures defined for man-machine interaction in the smart home application scene, and the solution implements efficient and effective interaction using low-cost smartwatches, and the interaction accuracy is $>87\%$ that the algorithm proposed in this paper can be well applied to the perceptual control of smart household appliances, and has high practical value for the application design of the perceptual interaction function of household appliances.



Objective

The world advances in technology every second, most of them targetting one goal, Artificial Intelligence. For almost a decade, smart systems have played an important part in human daily life. Our project aims to further enhance the Smart Home Experience by Deploying a Virtual Assistant. " " as it's named can do much more than just Turn lights ON/OFF. "" can also analyse the households consumption and provide insights that can help reduce the monthly Electricity Bills



The world



Area of Interest

Our Project mainly works around,

1. IoT - *Internet of Things*



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4. Web/App Development



References |

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- [5] A. Parsa, T. A. Najafabadi and F. R. Salmasi, "A Hierarchical Smart Home Control System for Improving Load Shedding and Energy Consumption: Design and Implementation," *IEEE Sensors Journal*, vol. 19, no. 9, 2019, doi: 10.1109/JSEN.2018.2880867.



Thank you !

Any Questions?

