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Proceedings of the 2018 7th International Conference on Computer and Communication Engineering, ICCCE 2018  
16 November 2018, Article number 8539258, Pages 246-251  
7th International Conference on Computer and Communication Engineering, ICCCE 2018; Kuala Lumpur; Malaysia; 19 September 2018 through 20 September 2018; Category numberCFP1839D-USB; Code 142740

## Development of Voice Control and Home Security for Smart Home Automation (Conference Paper)

Ebrahim Abidi, M., Asnawi, A.L., Azmin, N.F., Jusoh, A.Z., Noorjannah Ibrahim, S., Ramli, H.A.M., Malek, N.A.

Department of Electrical and Computer Engineering, Faculty of Engineering, International Islamic University Malaysia (IIUM), Kuala Lumpur, Malaysia

### Abstract

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This paper presents a remote development of voice control and home security for smart home automation system using Arduino mega, GSM SIM900A, Bluetooth module, and HC-SR04 ultrasonic sensor. A microcontroller is programmed to control up to four home appliances via Bluetooth technology and transmit the received signal from sensor to user smartphone. Nowadays, there have been many commercials and research projects on smart homes but most of these products utilize remote control which have button on touch screen. In addition, there is also a need to give supporting system for people especially to the elderly, disabled, and increase their home security. Hence, we proposed a development of a wireless remote control for home gadgets which can be controlled with voice. This proposed system is expected to recognize human voice using voice reader android application to turn on and off home appliance. Another important feature developed in this project is on the detection of movement, using ultrasonic sensor, in which the signal is converted to message and forwarded to the mobile user via GSM module. The accuracy of the system is found to be above 95% and the electrical loads have been successfully controlled using voice command in controlling their home. In order for the system to work, it is necessary to power up Arduino Mega by 12V DC adaptor and connecting all AC power loads to the electricity. In this project, the proposed prototype of smart home automation system is implemented and tested on hardware so the user can control certain number of home appliances using voice. © 2018 IEEE.

### SciVal Topic Prominence

Topic: Intelligent buildings | Automation | home security

Prominence percentile: 93.740

### Author keywords

Arduino mega Bluetooth module GSM SIM 900A Voice app and Relay drivers

### Indexed keywords

Engineering controlled terms: Bluetooth Domestic appliances Global system for mobile communications Intelligent buildings Remote control Touch screens Ultrasonic applications Ultrasonic sensors

Engineering Android applications Arduino Blue-tooth module Bluetooth technology

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
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 Asnawi, A.L.; Department of Electrical and Computer Engineering, Faculty of Engineering, International Islamic University Malaysia (IIUM), Kuala Lumpur, Malaysia; email:aniliza@iium.edu.my  
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